# FINANCIAL TIMES



World Business Newspaper

**Election trends** 

When results are unpleasant Edward Mortimer, Page 14 Solar energy

Closing in on cost competitiveness

Technology, Page 12

Germany Corruption in industry



**Information Technology** 

Why IT suppliers sponsor sports

#### **New IRA ceasefire** ruled out before **Uister talks start**

The IRA ruled out restoring its ceasefire from terrorist activities before the start of oexi week's all-party talks on the future of Northern Ireland. The UK and Irish governments were last night close to agreeing an agenda for the talks, with London appearing to drop its resistance to a powerful role for former US senator George Mitchell. Page 16

#### Coca-Cola Enterprises buys Cadbury plants for \$1bn

Cadbury Schweppes sold its British soft-drink plants for about £700m (\$1.06bn) to give it more resources to develop its confectionery and soft drink businesses globally. The buyer was Coca-Cola Enterprises, the US bottler 44 per cent owned by Coca-Cola. Page 17; Lex. Page 16; Strategy in a bot-

Deutsche Telekom, the German telecoms operator to be partly privatised in November in one of the world's biggest share issues, reported a 47 per cent increase in net profits from DM3.6bo in 1994 to DM5.3bn (\$3.47bn). Page 18; Lex, Page 16

Russia's Nato opposition 'softening': Germany urged fellow Nato members to take Russia's security interests into account claiming that Moscow was softening its opposition to enlarging the alliance. Page 2

French report urges tax eart: A high-level report submitted to French prime minister Alain Juppé says the government should cut the top rate of income tax from 56.8 per cent to 40 per cent and reduce the oumber of exemptions, Page 3

Finland prepares for ERM: Finland's parliament was last night set to approve changes in the country's currency laws clearing the way for the Finnish markka to join the European exchange rate mechanism. Page 2

Party rejects Bulgarian president: Bulgarian president Zhelyu Zhelev, 61, has been defeated in his party's primary to choose a candidate for the autumn presidential election. Page 3

Forex dealers plan safeguards: The Group of 20, the world's largest foreign exchange dealers, have stepped up efforts to control the risk of a breakdown in the \$1,230bn in payments that pass between them daily. Page 8

Romanian government in election defeat: Romania's ruling party was bracing itself for a humiliating defeat in local elections as unofficial results suggested it had won only one of the country's main cities. Page 3

Bouygues, the French construction group, Stet of Italy, Cable & Wireless of the UK and Veba of Germany are preparing to launch a new telecoms ven-ture in France. Page 17

World investment grows 46%: Worldwide flows of foreign direct investment jumped by 46 per cent last year to a record \$325bn from \$222bn in 1994, according to estimates by the United Nations Conference on Trade and Development, Page 8

European smoking campaign: Philip Morris, maker of Mariboro cigarettes, launched a European campaign against smoking bans and other attempts to reduce "smokers' rights". Page 3

Norwegian bank self-off: Norway announced a public offering of 19.8 per cent of Den norske Bank, a stake worth about NKr2.6bn (\$398m), reducing the state's holding to 52 per cent. Page 19

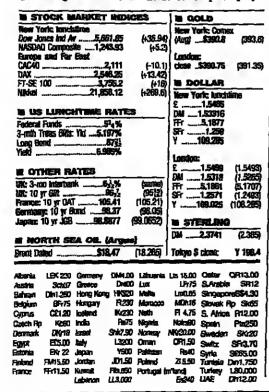
Portugal drops Renault claim: Portugal is abandoning a Es58hn (\$338m) claim for damages against Renault following agreement over the future of a Portuguese plant which the Freoch vehicle manufacturer had threatened to close with the loss of 760 jobs. Page 8

Taxing times in US campaign: President Bill Clinton and Senator Bob Dole made taxation the focal point of their battle for the White House, with Mr Clinton unveiling an initiative estimated to cost \$8bn over six years. Page 4

Tokyo backs \$1.2bn China project: Japanese cootractors working oo a 20-year power station project in southern China have been granted a \$300m official loan guarantee by Tokyo. Page 16

Abiola's wife killed in Nigeria: Kodirat Abiola, the wife of Moshood Abiola who is facing trial on treason charges for declaring himself Niger ian presideot after an annulled poli in 1993, died after being shot in the Nigerian capital, Lagos.

iese gunship shoots down US fighter: A Japanese destroyer accidentally shot down a US aircraft during naval exercises in the mid-Pacific. but the fighter's two crew members escaped injury.



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# WEDNESDAY JUNE 5 1996 Illegal ticket sales threat to Euro 96

Trade will make segregation of rival fans impossible By Jimmy Burns, Patrick

Security arrangements for Euro 96 are being put at risk because of the growing numbers of illegal tickets going on sale four days from the start of the football tournament, aeofor police officers warned yesterday. Superintendent Stuart Morgan, bead of planning and logistics for

Hillsborough stadium in Shef-field, one of the venues, said last night: "The way tickets are baing sold is going to make segregation of fans impossible. "We don't know where they're

preparing ourselves for rival fans sitting next to each other and that is going to cause problems in terms of crowd control,"

The ticketing system for Euro 96 has been designed to keep rival fans apart.
Supporters have only been allowed to boy tickets from authorised national football federations in groups of fellow

Despite attempts by the police and the Football Association, the crack down on illegal ticket sales, tickets were widely available in London yesterday. The Financial Times contacted

two travel agencies, a ticket outlet and a tout, all of which offered to sell Euro 96 tickets, including for potential flash-points such as the England-Holland and England-Scotland

games at Wembley.
The ticket agency asked £175
each for five tickets to sit with
England fans at the Holland

host of the championship, to game, although the tickets car-crack down on illegal ticket ried a face value of only £45 each. The agency did not inquire about the nationality of the buy-ers. The tout said tickets for the England-Scotland gama with a faca value of up £65 could be

bought for £250 each.
The four said they had obtained their tickets through a variety of sources, including one European football federation which had been unable to sell its quota and a continental travel operator which had also

been left with unsold seats. One City banker said he had been offered £4,000 for 22 tickets worth £300 by a ticket agency.
Official ticket prices for Euro

finals, and from £50 to £130 for the final. Tha only legal outlets for tickets in the UK are the FA, the football clubs staging tha

games, Keith Prowse and Sports-

world, the official corporate hos-

At the start of this week the FA said only 140,000 of the 1.4m tickets were left unsold. Police officers representing all 16 competing countries are due to meet in Loodon tomorrow to fin-96 range from £16 to £75 for first round and quarter-final matches, from £40 to £90 for the semi-

pitality agencies. Some agencies in the UK are authorised to sell tickets on behalf of foreign federations but only to foreign

alise an unprecedented interna-tional effort aimed at cootrolling

They will receive an updated intelligence report, based on ooe in March, which identified Brit-ish, German, Dutch, and Turkish

#### Failure throws into doubt Europe's leadership of commercial space transport industry

#### Ariane 5 explodes as rocket veers off course

By David Owen in Parls

Europe's leadership of the \$3bn-a-year commercial space transport industry was thrown into doubt yesterday when the new Ariane 5 rocket exploded 40 seconds into its maiden flight from Freuch Guiana.

The rocket, the largest built in western Europe, was destroyed by ground control after it veered off course. The launch, which cost an estimated \$500m and rained flaming debris near the European Space Agency's launch centre, was not insured, according to agency officials.

The rocket was carrying four small scientific satellites intended to study the relationship between the earth and the

The failure will deal a severe blow to Arianespace's hopes of continuing to dominate the increasingly competitive market in commercial satellite lannehes In recent years, the French-based group - whose 53 European shareholders comprise many of the companies which help build the Ariane rockets - had taken about 50 per cent of this market, which was once dominated by

But a string of new competitors - involving many of the biggest names in the US defence and aerospace sectors, including Boeing and McDonnell Douglas - is expected over the next two years. Analysts expect competition to intensify further early in the next century when they predict a



The Ariane 5 rocket takes off... 30 seconds later it explodes... the debris falls to earth

satellite-launching services. Space officials had no immediate explanation for yesterday's failure, but said a commission of inquiry would report its preliminary findings within eight days.

Among possible explanations from experts watching the launch were: a failure of the attitude control system; failure of one of the booster rockets leading the craft to spin out of control: aoma other failure which led safety officers to abort the mis-sion as the rocket veered off

Space officials promised to press ahead with the project. Under the original timetable, a second Ariane 5 flight was

planned for the autumn, with the first commercial launch set for early next year.

Mr Charles Bigot, Arianesp chairman, said the failure was "a disappointment, but . . . I know we must always bounce back after a disappointment". He indicated the next launch of Ariane 4, the smaller rocket which Ariane 5 is scheduled to replace after a three-year transition phase, was still expected to take place on June 12.

Mr François Fillon, the French space minister, said the government's confidence in the builders of Ariane 5 "remains total". Nasa, the US space agency expressed its sadness at the fail

ure and said it was convinced its European counterpart would "determine the causes". ESA officials have said in the

past that Ariane 5 is theoretically much safer than Ariane 4, having a risk of one possible failure every 70 lannches, compared with one every 15-20 launches with the smaller rocket.

The build-up to the launch took 11 years and cost \$7bn. The new rocket, which is designed to be able to launch two heavy communications satellites at a time, has little in common with its prede-

> **Explosion shatters** Ariane's hopes, Page 6

#### PC makers agree merger scheme

By Louise Kehoe in San Francisco and Michiyo Nakamoto in Tokyo

NEC, Japan's leading personal computer maker, has agreed to merge its non-Japanese and non-Chinese PC operations with those of Packard Bell, the unprofitable leader of the US home PC market.

The companies presented the deal as the formation of a global PC giant with potential combined revenues of about \$8bn. making it the world's fourthlargest PC manufacturer after Compaq Computer, International Business Macbioes and Apple

Computer. The deal appears also to be aimed at improving Packard Bell's financial performance and providing NEC with an insur-ance policy against the day when its Japanese language proprietary system can no longer compete effectively against international systems.

In April, NEC invested \$283m in Packard Bell, raising its 19 per cent stake to an effective per cent, including preference

At the same time, Groupe Bull of France also acquired a 19 per cent stake in Packard Bell. through the transfer of Zenith Data Systems, its struggling PC

> Continued on Page 16 Lex. Page 16

# Bankers prepare to discuss rescue package for KHD

By Michael Lindemann in Bonn

The outling of a rescue package for Klöckner-Humboldt-Dautz, the German engineering group which is struggling to stave off bankruptcy, emerged as German and international banks prepared for a meeting today to decide the group's future.

However, it remained unclear whether a rescue attempt would succeed because KHD, which has uncovared hidden losses of DM650m (\$427m), refused to say whether Mr Anton Schneider, its chief executive, had been able to persuade three of KHD's clients in Saudi Arabia to waive penalty payments on contracts for cement plants.

Tha government of North Rhine-Westphalia, the northwestern state where KHD is based, yesterday agreed to sign a letter of intent to buy RHD properties worth DM89m. The city of Cologne, which is

home to KHD and stands to lose up to 5,000 jobs if the group goes bankrupt, has agreed to pay the same amount so that the two partners could together put up DM178m to buy properties in Cologne. Mannheim and a number of other sites, which KHD would then rent back.

Mr Wolfgang Lieb, a spokesman for the state government, said he expected the property purchase to conform to European Union enidelines.

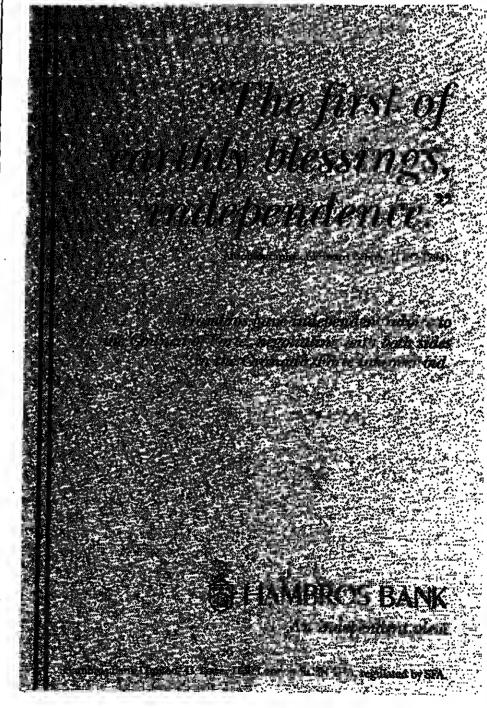
Officials said Deutsche Bank Bank declined to comment

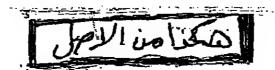
Bayerischa Verainsbank, are interest payabla on loans to the company, which according to press reports total DMI.9bn. KHD said it planned a press

conference at 2pm in Frankfurt today to "present details of a restructuring concept following the irregularities and manipula-tions at KHD Humboldt Wedag". the group's subsidiary which spe-

cialises in cement plants.

Humboldt Wedag had made would shoulder most of the unspecified rescue package, conbids for cement plant contracts in Saudi Arabia in recent years tributing OM550m. Press reports suggested that debts worth DM300m would be forgiven and which were at least 20 per cent that the bank would inject fresh below market prices. funds worth DM250m. Deutsche As bankers prepared to discuss the viability of a rescue, press reports suggested that KHD faced losses of DM800m, considerably KHD'a workforce, which numbers 9,425 at several plants across Germany, is prepared to take a wage cut, work longer and forgo part of their pension entitlement higher than the DM650m first reported last week. However, neither the company nor Deutsche Bank, which owns in order save "over DM100m" 47.7 per cent of KHD and has co-ordinated the rescue attempts, which would go towards the rescue package, executives said. Other banks which are memwould comment on the higher losses. "Talks are still taking place," one executive said. bers of the KHD consortium, including Dresdner Bank and CONTENTS FT/SP-A Wild Indices... Asia Pacific Name . World Trade Neve \_30,31 Menaged Funds LONDON · LEEDS · PARIS · FRANKFORT · STOCKHOLM · MADERD · NEW YORK · LOS ANGELES · YOKYO · HOME KONG





# Finnish markka on course for ERM

Parliamentary vote last night would clear way for government to seek early membership

By Hugh Carnegy in Stockholm

Finland's parliament was last night set to approve changes in the country's currency laws. clearing the way for the markka to join the European exchange rate mechanism, and fuelling speculation that the government may soon seek

such a move. The recent relative stability and streogth of the markka coupled with Finland's low inflation outlook and current account surplus, have led many economists and market analysts to predict a Finnish

By Bruce Clark in Berlin

Germany yesterday strongly

urged its fellow Nato members to take Russia's security inter-

ests into account, and claimed

opposition to enlarging the alliance.

Bnt senior US and French

officials said Russia had sig-

nalled a change of tone.

though not of substance, in its

attitude to Nato at a meeting

in Berlin of the western alli-

ance and its former adver-

Chancellor Helmut Kohl said

a oew relationship between

the alliance and Russia should

European security architec-

ture". Russia and Ukraine

"are part of Europe; we must take their security interests into consideration", be said,

while reaffirming that be viewed as "legitimate" the

desire of some ex-Communist

Russia, Ukraine and our [east-ern] neighbours can accept,"

"We want solutions which

The quiet bum of a functioning country was still

discernible yesterday in

the airy corridors of govern-

ment in Prague. A degree of

calm returned to Czech politi-

cal discourse and even to the

financial markets as the inconclusive outcome of last week's

Faced with the task of extri-

cating the Czech Republic from

the gridlock created by the loss

of Mr Vaciav Klaus's parlia-

mentary majority after the

poll, the country's polarised

political parties began a tenta-

tive search for that vaunted

Mr Klaus and Mr Milos

Zeman, the opposition Social Democrat (CSSD) leader and in

effect the blg winner in the

election, were still keeping a

careful distance They must

decide the immediate political

future, and both know they

President Vaclay Havel

caused some surprise on Mon-

day when he did not ask Mr

Klaus to form a new govern-

ment immediately. Yesterday.

he was strongly attacked for delaying by the leading pro-Klaus daily, Mlada Fronta Dnes. But Mr Jiri Pehe, an ana-

lyst at the Open Media

Research Institute, said Mr.

If Mr Klaus were to bring a

minority administration before

parliament too soon it would

almost certainly be defeated by

a united opposition, be said.

bility rather than the simple

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O'The Financial Times Lumited 1996.
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That would cause real insta-

Havel was wise to wait.

will have to talk some time

but not just vet.

Czech quality - compromise.

general election sank in.

form the core of the future

move into the ERM in preparation for joining the planned European monetary union in

Mr Paavo Lipponen, the Social Democratic prime minister, reiterated earlier this week his belief that Finland sbould be among the first members of Emu "When Emu is born, it is best that Finland be among the first to join because Emu will then become an economic and political reality," be told a trade union conference.

On the same day, Mr Sauli Nimisto, the Conservative finance minister in the leftright coalition, said he believed

the markka to join the ERM if the country was to qualify for

The qualification criteria ontlined in the Maastricht treaty foresee two years in the ERM for potential Emn participants before Emu membership is decided in 1998. Mr Nimisto's comments implied Finland would have to join the mechanism this year.

A technical obstacle was the wording of the currency laws which were framed to enable

land to float its currency in September 1992. Once signed by President Martti Ahtisaari, the reworked new currency laws will free the government to join the ERM.

The markka has been floating since the 1992 break with the Ecu, but has strengthened aignificently over the past 18 months as Finland's public finances have been brought under control in preparation for Emu. Inflation is set to be just 1 per cent this year and

pressure from Finland's European partners would be such that it would be necessary for crippling recession forced Finland's European partners would be such that it would be necessary for crippling recession forced Finland's European partners would be such that it would be necessary for crippling recession forced Finland's European partners would be such that it was in June 1991. The markka, at around FM3.10 to the D-Mark, has been traditional trade of the control of tion margins.

One difficulty for Finland in deciding when to move into the ERM is the position of Sweden, its much higger neigh-bour. Mr Eric Asbrink, the Swedish finance minister, yesterday repeated that Swedish membership of the ERM was not "current", denying market rumours thet Finland, Sweden and Italy would hold talks on a co-ordinated ERM move at a meeting of the EU's monetary committee in Stockholm in 10

that do not join the alliance.

sia, but Moscow has yet to

reply to its detailed proposals

retary-general, described the

meeting between Mr Primakov

and his western counterparts

as "very triendly, positive and constructive" but added: "That doesn't mean the position of

A Nato official said there

was general appreciation of the fact that Mr Primakov had

avoided "shrill, rhetorical out-

bursts" in his remarks to the

This had contrasted with Mr

Solana's recent trip to Moscow when Mr Primakov delivered

an 80-minute diatribe on tha

ills of Nato enlargement and was later told by President Borts Yeltsin that he should

CSSD: centre

left, Biggest gainer in election under leadership of Milos Zeman.

but oppos

Mr Javier Solana, the sec-

on the subject.

widely seen in financial markets as approaching the conditions for ERM membership. It rose to its highest level against the D-Mark yesterday sinca December 1992, reaching SKr4.37, following the 12 cuts in the key short-term "repo" rate by the central bank this year. The rate was cut yester-

day by 0.2 percentage points to 6.3 per cent. However, the Swedish Social Democratic government insists ERM membership is not a vital condition for Emu membership and has repeatedly denied it intends an early entry.

#### Bonn says Russia easing Nato stance Greece reins in co-operation programme, in the hope that Nato can mainforex tain a close relationship with those ex-Communist states Nato pledged a year to work out a "political framework" for its relationship with Bus-

By Kerin Hope in Athens

Greece's cantral bank yestarday took staps to restrain foreign currency borrowing by Greek companies and consumer lending to indi-vidual Greeks. It was responding to a 30 per cent rise in commercial bank loans to the private sector in the first four

The compulsory reserve requirement for commercial banks has been raised from 11 per cent to 12 per cent of deposits, and all foreign cur-rency assets and liabilities are to be included in the reserve

rate has already grown from 8.1 per cent in December to 9.2

The measures should help to reduce liquidity, and will close a loophole that excluded forex loans with a maturity of more than two years from the reserva requirement. This allowed local banks to lend in foreign currency for two years and one week at lower interest

Greek companies avoid borrowing in drachmas because loans in Ecus and D-Marks are easily available at much lower interest rates. Furthermore, the risk of borrowing in for-eign exchange has been reduced by the central bank's "strong drachma" policy, which has seen the currency appreciate by 1.7 per cent against other European currencies between January and

Small Greek companies can borrow in Ecus at 6 per cent. compared with 18 per cent for drachma loans. As a result, many borrow considerably more than they require and invest the balance in short-term treasury bills at interest rates of more than 12 per cent

Domestic credit expansion to ing than is justified by normal business activity", the central bank official said.

Drachma interest rates are high because of Greece's high inflation rate and because the government has to raise several hundred billion drachmas every month to finance a pub-lic debt equal to ill per cent of

# borrowing

months of this year.

The central bank is worried about the inflationary impact of a continued rise in credit expansion, Greece's inflation

per cent in May.

According to a bank official:

the private sector totalled Dr360bn (\$1.5bn) in the first four months. Of this, Dr300br was raised in foreign currency, representing a lot more fund-

gross domestic product. . The central bank has also tried to restrain a surge in con-sumer lending in the first four months of this year. Consumer loans are to be restricted to 65 per cent of the value of a car or other product, and the ability to take out more than one peraonal loan without accurity will be curbed.

said Mr Kohl, underlining bis country's determination to find a formula for Nato expansion that would avoid alien-

ating Moscow. Mr Klaus Kinkel, the German foreign minister, said his Russian counterpart, Mr Yevgeny Primakov, had told the Nato meeting that Russia "was not against enlargement in principle" and it understood some countries wanted to join,

Czech politicians start

Calm is returning after the turmoil of last week's inconclusive election, writes Vincent Boland

Mr Zeman's claim that be

would not support Mr Klaus as

prime minister has still to be

tested. But vesterday there was

speculation that the price of

that support - which tha gov-

ernment might be willing to concede - was to appoint the

CSSD leader chairman of par-

Mr Klaus's immediate task.

however, is to regroup his out-

going centre-right government.

In the new parliament, on the assumption that be will be the

first to be asked to form a new

administration. Thesa talks

will be complicated by the

need to bear the Social Demo-crats in mind, because opposi-

tion support will be essential

to its survival. The CSSD won

61 seats and the combined

However, the coalition part-

ners - the Civic Democratic

party (ODS), the Christian

Democrats (KDU) and the Civic

Democratic Alliance (ODA) -

will have to paper over many

increasingly apparent before

rate campaigns. Several times in the past 18

months their old coalltlon

seemed close to breaking point,

but the commanding position of the ODS and Mr Klaus's

authority and occasional com-

promises kept it intact. And

many observers noted that the

policy differences that were

opposition won 101.

which won 99 out of 200 seats

to pick up the pieces

Primakov (left) and Solana in Berlin yesterday: seeking better Russia-Nato relations According to Mr Kinkel, the Russian minister went on main objection was to the pos-sible establishment of Nato structures near its own bor-

> However, Mr Hervé de Charette, the French foreign minister, said be detected no change in the Russian stance of radical opposition to the idea of

The KDU's vision of a social

market economy bas often

been at odds with Mr Klaus's

Individualist approach and the

more hard-edged economic

views of the ODA. Although It

has supported mass privatisa-

tion, it is not an instinctively

free-market party and has sup-

port mainly among rural Cath-

in Czech politics in 1992, how-

ever, meant that the fiercely

anti-Communist KDU chose to

exercise power through a mar-

riage of convenience with the

moderate right. That coalition

saw the implementation of

mass privatisation and a slow

restructuring of the economy

that kept unemployment low and generated a remarkable

degree of social cohesion in a

stronger, it will be more diffi-

cult to take the tough mea-sures that will enable tha Czech Republic to bridge the

wide gap in living standards

with the countries of the Euro-

pean Union, which it is desper-

eralisation of rent and energy

prices, further privatisation.

especially of the banking sec-

tor, the restitution of property

confiscated by the Communists

from the church, and social

reform and decentralisation.

These are issues that surfaced

long before the outcome of this

Among the measures are lib-

ate to join.

Now that the moderate left is

country that likes consensus

The fragmentation of the left

olic voters.

US diplomats gave a similar British officials said Mr Primakov had expressed appreci-ation of several points in an announcement, issued by Nato ministers on Monday, which called for a more flexible alliance, adapted to a post-cold

Britain wants an npgrading of Partnership for Peace, the Nato-inspired military

The new Czech parliament



communis

support fell

though .

Links with the

constructive role

Czech politics.

form new on economic reform and will insist that Mr Klaus remain prime

KDU: centre.

Partner in

outgoing

property

and extra cebinet

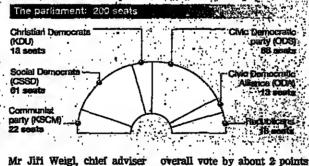
excessive price liberalisation new editabilistration needs its pulgoing

right. Partner in in favour of opposed by most decentralisation other parties - Will push for less Wit push for less

Republicans: extreme right.

exploiting fears over crime and aconomic

Deputies sprify attend partiarner under smell devaluation obstructionist Darly (ODS)



Mr Jiří Weigl, chief adviser to Mr Klaus, said yesterday that the partners were confident they could regroup. "There is a feeling of common ground among tha coalition partners," ha said. The onestion was whether it would find support from Mr Zeman. "Everybody has learned a little blt" from the election result, Mr Weigl said.

A paradox of the election

to 44 per cent it won six seats fewer than in the last election in 1993. This is because of a sharp fall in the number of votes cast this time for parties that did not win the minimum 5 per cent necessary to get to But that, and the fact that

the unreformed Communists were the only party to lose sub-

election, but were postponed three parties spent as much time on the campaign trail on the assumption that Mr stantial support in the election, is littla consolation to Mr highlighting their own differresult is that while the three-Klaus would have another four . years to implement them. . . ences as in attacking the left. party coalition increased its

France and Germany try to settle differences over cross-border competition

# Move to open EU's electricity markets

By Neil Buokley in Bruss and Judy Demosey in Berlin

Germany and France will today try to LEMMANY:
Responsible for Advertising: Colin A. Kennard. Pranter: Hirriyet international Verlagueseleckaft tubhi. Admiral-Rosenddhi-Straste St. 63263 New Isenburg ISSN 0174-7363. Responsible Editor: Richard Lanbert. etc. The Financial Times Limited, Number One Southwark Bridge. Loudon SEI 941L.

FRAMCE: break a four-year deadlock over proposals to open the European Union's electricity markets to cross-border competition. Their ministers will meet in Dijon as part of a regular series of bilateral summits. But the task facing the two countries - whose differences have stalled attempts at an EU-wide agreement is more complex than they expected wben EU ministers agreed a framework

in principle last month. Today's meeting was envisaged as a discussion on the extent of liberalisation and the timetable. Concern is mounting, however, that any deal could be imperilled by an issue they thought had been settled: last month's decision that member states should be allowed to select one of two models of market

• "third party access", favoured by

Germany and the UK, where customers (end-users or distributors) cen conclude contracts directly with foreign electricity suppliers:

 the "single buyer" system, supported by France, Benelux, and Greece, where a designated national electricity buyer enters into contracts on behalf of its German and British electricity com-

panies are strongly opposed to this, arguing that allowing two systems of

market opening will be unworkable and

The UK, which with Scandinavia, has gone furthest in liberalising its energy sector, has been lobbying German officials not to accept it. German electricity companies, whose own monopoly of domestic supply and distribution will be weakened by legislation currently being drafted, have also been lobbying Bonn.

This proposed compromise defies all economic rationale," said Mr Christoph Energie, Germany's largest electricity company. There is no place in Europe for two different energy systems. The single buyer system is far from opening up the market."

France is determined to defend the single buyer model, which would allow Electricité da France (EdF), the stateowned utility, to retain control of access to the national grid. Countries adopting the third-party access option would be opening their markets fully to French companies.

France and EdF argue that the single buyer system does not impede access, and will lead to better long-term management of energy resources and policy. Differences over the two systems threaten to reopen the whole debate about the liberalisation framework agreed in Brussels last month. That envisages equal market opening in all countries, increasing in stages over a set period, with states allowed to

Hilz, senior energy analyst at RWE; impose obligations relating to safety and environmental matters on electricity companies.
The Italian presidency last month

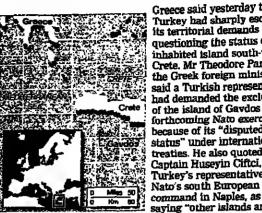
proposed that 25 per cent of the market accounted for by the biggest electricity users - would open initially, rising to 30 per cent over nine years. Germany wants the market to open further and faster. France wants more restricted opening with a longer timescale. A flurry of meetings between French and German officials is said to have

gone some way towards bridging the gap, although the sensitivity of the otiations is such thet neither side will reveal the figures now on the table.

If they can reach agreement most other countries are likely to support the plan. Since it requires only a qualified majority to be adopted by the council of ministers, it would be unaffected by UK non-co-operation in protest over the EU han on heef exports, which only involves decisions requiring unanimity

EUROPEAN NEWS DIGEST

# Greek-Turkish island row flares



Greece said yesterday that Turkey had sharply escalar its territorial demands by Turkey had sharply escalated questioning the status of an inhabited island south-west of Crete. Mr Theodore Pangalos, the Greek foreign minister. said a Turkish representation had demanded the exclusion said a Turkish representative Crete of the island of Gavdos from a forthcoming Nato exercise, because of its "disputed status" under international treaties. He also quoted Captain Huseyin Ciftci, Captain russys representative at Nato's south European

saying "other islands and/or tiny rocks which surround Crete" should be excluded from the war game. Athens is under pressure from fellow members of the European Union to unfreeze EU credits to Turkey. It is refusing to do so unless Ankara agrees to submit its claims in the Aegean to international arbitration. Mr Pangalos said Gavdos had about 300 residents. No

Turkish foreign ministry officials could comment on the affair, while the government itself is on the verge of dissolution. The government-owned Anatolia news agency commented: "At this stage the Turkish side is saying it is neither Greek nor Bruce Clark, Berlin, and John Barham, Ankara

Spain cuts its key interest rate

The Bank of Spain yesterday kept a step shead of market expectations by announcing a surprise quarter point cut in its benchmark interest rate from 7.5 per cent to 7.25 per cent.

bringing it to its lowest level in recent years.

The reduction, the fifth since the beginning the year when the rate stood at 9 per cent, came as a boost to the centre-right government after a cool response in financial circles to its plans for curbing budget expenditure.

Analysis, who had been expecting the central bank to wait

before deciding whether to make another reduction, saw the move as a response to slower than expected growth this year. The finance ministry said the cut should have a positive effect on economic activity and jobs, and expressed confidence there would be further reductions.

However, emptoyers' leaders in the industrial Basque region criticised the move as too modest, saying it was not enough to offset the effects that the peseta's recent strength was having

Azeri oil deal worth \$4bn signed A consortium of multinational oil companies, including Iran's state oil company, yesterday signed a \$4bn deal to exploit the Shakb Deniz oil and gas deposit off Azerbaijan's Caspian Sea

coast, the second largest in the ex-Soviet republic.

The consortium is led by British Petroleum and Norway's Statoil, who will control 51 per cent through a joint venture. The deposit is estimated to contain 4bn cubic metres of natural gas and 200m tonnes of natural gas condensate and oil France's Elf Aquitaine, Russia's Lukoil and the state oil companies of Azerbaijan and Iran each have 10 per cent shares in the project, Turkiye Petrollari of Turkey has the remaining

Shakh-Deniz is the first project in Azerbaijan not to involve US companies and so the first in which Iran has been allowed to participate. Tehran's presence in Azerbaijan's offsbore oil industry has been considered vital because Iran officially challenges Azerbaljan's claim to title over offshore Caspian resources. Peter Graff. Baku

France Télécom strike weakens

Protests by France Telecom employees against the partial privatisation of the state-owned utility appeared yesterday to be petering out, when only a third of its staff responded to a strike call. The response to similar strike calls was 75 per cent of the utility's 150,000 employees last December and 45 per cent last month.

Union leaders attributed the decline in strike turnouts to concessions by the government that guaranteed the civil servant status of existing employees. The French parliament is now debating bills to deregulate the telecommunications market in 1998, with up to 49 per cent of France Telecom to be sold off to employees and investors.

Today unions at Electricité de France (EdF) have called demonstrations to protest against moves to liberalise the European energy market. Mr Franck Borotra, the industry minister, said yesterday that EdF would remain "a 100 per cent state enterprise". But France is now prepared to try to negotiate a compromise permitting foreign producers to sell electricity to large industrial users.

#### Politician welcomes drug charge

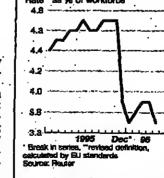
Mr Marco Pannella, the gadfly radical of Italian politics. yesterday achieved his ambition of being sent for trial on charges of distributing drugs as part of his campaign to decriminalise the use of soft drugs.

A Rome judge decided he had broken the law on distributing marijuana and hashish after a demonstration last December to promote their legal use. On this occasion be tossed to the crowd eight bags, each containing a gramme of hashish, and three packets of marijuana each with 100g inside. Earlier, be had publicly handed out marijuana at Rome's Sunday Porto Portese market and produced some on a TV programme.

Mr Pannella, who was responsible for introducing divorce and abortion laws via referendums, is promoting a referendum to legitimise the use of soft drugs. He lost his seat in the April general elections and is no longer protected by parliamentary

ECONOMIC WATCH

#### Austrian jobless rate falls



Austria's unemployment rate eased to 3.7 per cent in May from 3.9 per cent in April, but was np slightly from an adjusted 3.6 per cent a year ago, the labour office reported yesterday. The unadjusted number of unemployed stood at 207,879 last month, down 12.4 per cent from April and 7.7 per cent higher than in May 1995. The government took credit for the improvement in the month and attributed it to job-creation measures and public works projects. Economists, however, pointed to a 22 per cent drop in job vacancies as a bad sign. Austria has the second-lowest

. PT

unemployment rate in the European Union after Luxembourg. but the rate has edged up steadily over the past year, with economists predicting jobless rates of up to 5 per cent in the next few years. The unemployment figures appear particularly low to Austrians, who are used to higher figures from a different calculation method. The government has oow adopted the EU method, based on surveys, rather than actual registrations at unemployment offices. Eric Frey, Vienna ■ The Swedish central bank cut its repo rate from 6.5 to 6.3 per cent yesterday. It was the twelfth cut since January. Swiss retail sales fell 1.3 per cent in real terms in April from a year earlier. in March, retail sales fell 2.3 per cent.

Bulgarian President Zhelyu Zhelev has been hesvily defeated in his party's week-end primary to choose a candidate for the presidential elec-tion scheduled for the autumn, according to the official result released vesterday.

Mr Petar Stoyanov, 44, and a little known lawyer, will be the candidate for the Union of Democratic Forces (UDF) which is presently in opposition to the governing Bulgarian Socialist party (BSP) in the

country's parliament.
Mr Zhelev, 61, a dissident philosopher under the communist regime of Todor Zhivkov. was elected Bulgaria's first post-communist head of state

He said last night he would ahide by the result, withdraw his candidacy and support Mr Stoyanov. "The poll shows that Bulgarian society wants change," he said.

The Central Electoral Commission said that Mr Stoyanov won 66 per cent of votes cast against President Zhelev's 34

mary, exceeding the expectations of the organisers who described it as a triumph for the Balkan country's democracy. All Bulgarian adults some 6.5m people - were enti-tled to take part in the election, but supporters of the Socialists and other leftwing groups largely shunned the

The UDF is seeking to make the presidential campaign into a springboard for early parlia-Yesterday it joined other

opposition parties, the People's Union and the ethnic Turk Movement for Rights and Freedoms to call for a vote of no confidence in the Socialist government of the prime minister. Mr Zhan Videnov, over its han-dling of the country's economic

Mr Stovanov has been prominent in recent days at protest rallies calling on the government to resign and claiming that it was unable to carry out urgently needed economic reforms. He has blamed the government for the current shortages of bread and petrol.

catastrophe. There is no hope,

The opposition is unlikely to win the confidence vote, which is expected to be held next week, as the Socialist government has an absolute majority. Bulgarians have been hit

hard in recent weeks by steep price rises and by shortages of ead and fuel, which have followed in the wake of drastic increases in interest rates aimed at averting a collapse in the currency. The government, in power for 17 months, increased value added tax last week by four percentage points to 22 per cent.
It also announced further

rises in import taxes and excise duties and an 80 per cent increase in fuel prices to bolster the state budget and to raise funds to pay for reforms agreed with the International Monetary Fund. The tax increases, which are

expected to raise the rate of inflation by 6 per cent e month, have led to anti-government protests by thousands of pensioners, trade unionists and taxi drivers in the capital:



Look of resignation: President Zhelyu Zhelev of Bulgaria voting in last weekend's US-style primary election which he lost

# Radical tax reforms urged in France

By Andrew Jack in Paris

The French government should cut the top rate of income tax from 56.8 per cent to 40 per cent and substantially reduce the number of exemptions, according to a high-level report submitted to Mr Alain Juppé, the prime minister, and released yesterday.

The report, by a group of five senior civil servants, contains a strong indictment of the French tex system and calls for a series of radical changes which are likely to be controversial.

It calls for the lowest-paid to be exempt from tax, for the existing sliding scale to be reduced to six bands, for higher income earners to be taxed on family allowances and for the lower income tax celling to be balanced by eliminating the practice of deducting 20 per cent from an employee's earnings before calculating tex.

Ministers are urged to con-

sider greater harmonisation of professional tax - levied on companies by a range of differ-ent levels of local government largely on the basis of the number of staff employed and invoctment undertaken

The report says that meaningful tax reform cannot take public expenditure; that spending should be balanced by tax revenues; and that excessive simplification of the system could risk triggering injustices.

R criticises proposals being discussed at the European Commission for a switch in the "destination-based" system of value added tax to one levied at the point of origin of the goods or services being sold. It says such a system would create substantial conflicts.

Mr Juppé stressed on Mou-day ahead of the report's publication that he would not be bound by its conclusions, but his statement echoed a number of its recommendations.

His proposal for a new universal health insurance charge triggered an angry response from French unions, with Force Ouvrière calling it a precursor to the privatisation of the medical system and the Communist backed Confédéra-

describing it as "demagogic". Mr Dominique de la Martinière, who headed the group which wrote the report, yesterday said on French radio that his recommendations would be "torn to pieces" over the next few months by pressure groups and politicians, and he

"thrown to the dogs". His report says taxes and other charges now represent a record 45 per cent of gross domestic product, the highest proportion in any large developed country. It warns of the sharply growing burden of social expenditure, notably in health care, and of the danger of the more rapid growth in real wages of public sector rather than private sector

workers. It says the tax system has lost its elasticity, with each rise in charges accompanied by e sharp growth in the number claimed as people adopt "sur-vival tactics". It also calls for modification to the incentives payable on life assurance products, with renewed emphasis on encouraging the country's tion Générale du Travail nascent pension system.

Unofficial local election results suggest that only one main city was won

# Voters shun Romania's ruling party

Romania's governing Party of Social Democracy (PDSR) was last night bracing itself for a humiliating defeat in the current round of local elections as unofficial results from Sunday's first round suggested it had won only one of

the country's main cities. The elections, the first nationwide polls for nearly four years, are an important test for Romania's many political parties ahead of parliamen-tary and presidential elections due in

As results continued to come in, it appeared the PDSR, the rump of the party of former senior communists which has held power at the national level since December 1989, had won outright the contest for mayor in only one large city - Galati, a steel town in

In several other large cities where no

candidate won an ebsolute majority, PDSR representatives did not finish among the top two candidates who will go to a run-off in the second round on sylvanian city of Cluj, official results

erament's junior coalition partner -was re-elected after winning 50.7 per cent of the vote. The PDSR appeared to have fared better in small towns and in the coun-

tryside, home to nearly half Romania's

The governing party said yesterday that it believed former tennis star Ilie Nastase would save its face in Bucharest by winning the mayoral election in the second round

showed the party - whose minority government is considered mediocre and corrupt by many Romanians - had polled just 4.3 per cent in the contest for mayor.

The incumbent, Mr Gheorghe Funar ist leader whose party is the PDSR gov-

23m population and where the party is

traditionally strongest. The centre-right Democratic Convention (CDR), Romania's main opposition group, topped the polls in many impor-tant cities, including Bucharest. Libtion, and the centrist Social Democrat formed wall, as did a neo-count

parliamentary party.

The CDR was the main winner of the last local elections in early 1992 but later that year lost the general elec-tions which were delayed for several months, in contravention of the constitution, to allow the PDSR's precessor party to sort out its internal

The PDSR, which did not exist in its resent form at the time of the last local polls, said yesterday it still believed its candidate, Mr Ilie Nastase, the former tennis star, would win the contest for mayor of Bucharest in the second round.

The party had hoped to win the capital as well as several regional cities to boost its chances in what is expected to

# Philip Morris launches pro-smoking campaign

Philip Morris, maker of Mariboro cigarettes, yesterday launched a pan-European cam-paign against smoking bans and other attempts to reduce "smokers' rights". . Its central claim, unveiled at

a press conference in London, was that there was no statisti-cal evidence that cigarette smoke can cause cancer in non-smokers who live and work with smokers.

"There is a constant drum-best on the issue that my cigasaid Mr David Greenberg, European vice-president of public affairs for Philip Morris, the world's largest cigarette per advertising campaign across Europe over the next six weeks will argue that 32 of the 40 published studies on passive smoking show no significant correlation between passive moking and increased risk of

lung cancer. Philip Morris said e study by the US Environmental Protection Agency, the report most widely quoted by the anti-smoking lobby, only found a correlation of 1.19. A factor of

one equalled no increased risk. By comparison, smokers ran a three to 22 times higher risk of contracting lung cancer than non-smokers depending on factors such as their consumption rate. Anti-smoking campaigners argued, however,

Secretary for the second of the second

that Philip Morris's focus on lung cancer ignored the wider

impact of passive smoking. "Smokers only inhale 15 per cent of their cigarettes' smoke. The rest is in the air which equals e heliuva lot of toxins," said the British Medical Asso ciation. "The real cost of pas-sive smoking is not lung cancer but the effect on children

and people with asthma."
Philip Morris's edvertising blitz last year against smoking bans around Europe drew an angry response from the European Commission. The company declined to disclose the cost of the latest campaign "but we feel a responsibility and desire to speak out on

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World's biggest carmaker plans appeal after calling Alabama court's award 'outrageous'

# GM vows to fight \$150m injury award

General Motors vowed yesterday to fight a \$150m damages award handed down by a jury in Alabama, one of the largest personal injury awards ever made against a US manufacturer.

The jury, in a circuit court hearing. ordered the world's biggest carmaker to pay \$50m in actual damages and \$100m in punitive damages to Mr Alex Hardy, who was severely injured five years ago when a GM sport utility vehicle he was driving crashed Mr Hardy claimed the accident was caused when the rear axle of his

injuries were made worse when a door latch gave way and he fell from

GM continued to maintain yesterday that Mr Hardy was asleep at the wheel at the time of the crash. and that the broken axle had been a result of the crash, not the cause. Also, it claimed that Mr Hardy had been thrown through the windscreen because he was not wearing a seat belt rather than falling from the

The jury award comes less than a standard month after the US Supreme Court awards.

made by another Alabama jury which had been widely held up by manufacturers as a sign of a legal system run amok. In that case, the jury had awarded \$4m in punitive damages, leter reduced to \$2m, against BMW for selling a car as new

General Motors called the latest award "completely outrageous" and said it would appeal. It also called on lawmakers in Washington to think again about imposing national

after retouching its paintwork.

While rejecting a complete overhaul of the tort law system, Congress recently approved a bill to limit some product liability awards. President Bill Clinton has steadfastly set his face against putting any new

restrictions on jury awards. The GM case is also likely to bring renewed pressure from manufacturers for reform of tort laws in the handful of states, including Alabama, whose juries have traditionally handed down

the highest personal injury awards.

Mr Thomas Gottschalk, GM's general counsel, said Alabama "has a pattern of increasingly excessive

personal injury awards, driven largely by plaintiffs' lawyers who ignore hard avidence and play to the emotions of the jurors in a few carefully selected counties." The latest case, he said was "the crowning example of a state tort system gone berserk."

Texas, another state known for its high personal injury awards. particularly by juries in a handful of poorer rural counties in the southern part of the state, recently passed legislation making it harder for plaintiffs to have their cases heard in jurisdictions likely to be more favourable to them.

take, 70 per cent of which is made up of consumption based taxes,

principally value added tax. VAT was last year raised 3 points to what Mr Cavallo admitted was the "elevated"

rate of 21 per cent.

Mr Cavallo said the task of reducing tax. evasion was "difficult and complex" and had failed on several

previous occasions.



# Clinton, Dole line up for battle of taxes

President Bill Clinton and Senator Bob Dole yesterday made taxation the focal point of their battle for the White House, each seeking to appeal to middle income Americans.

Mr Clinton, in a graduation peech at Princeton University, unveiled a new \$1.500 a year tax credit to help pay for tuition in the first two years of higher education. Students would have to maintain a B grade average to qualify and would lose the benefit if found to have used narcotics.

It would supplement his earlier proposed \$10,000 a year tax deduction for university fees which still languishes in Congress. The new initiative, estimated by the White House to cost \$8bn over six years, would be financed by assorted reve-nue means, including the reinstatement of the lapsed departure fee on international air

Mr Dole visited a building site near Richmond, Virginia, to charge that Mr Clinton's refusal to support the constitutional amendment to balance the budget amounted to a hid-den "stealth" tax on all

He told a rally not to believe what the president was propos-ing in Princeton and said "who knows what taxes he'll increase if re-elected." He ascribed the recent increase in mortgage rates, up about 1 per-centage point to over 8 per cent so far this year, to Mr

Both the president and the majority leader, who confirmed yesterday he would leave the Senate next Tuesday after the vote on the balanced budget amendment, are being bombarded with advice to come up with more

radical tax positions.
For Mr Dole, the pressure comes mostly from rightwing Republicans keen to revive the "supply side" policies of the early Reagan administration. He recently met Mr Steve Forbes, his early primary oppo-nent and advocate of the flat

rate of income tax. But the majority leader. never a supply side advocate, is more comfortable stressing the virtues of a balanced budget and attacking Democratic "tax and spend" policies.

According to a report in yes-terday's Wall Street Journal, Mr Clinton is also being advised by Mr Dick Morris, his controversial political consultant, to espouse new tax cuts. mostly as a tactical means to push Mr Dole into even more radical tax positions. But Mr Leon Panetta, White

House chief of staff, and Dr Alice Rivlin, still budget director pending confirmation to the Fed Board, have urged the president to stay within existing budgetary confines.

Mr Panetta said last week it would be wrong "to engage in a bidding war on tax cuts." The greater political advantage, in this viewpoint, would be to hold the budgetary line and tempt Mr Dole into abandoning his doctrine of fiscal responsibility. This jockeying for the tacti-

cal edge probably bemuses most Americans, according to the latest survey by the New York Times and CBS News. It found 49 per cent preferring to cut the budget deficit over lower taxes and 47 per cent favouring the other way round.

a tiny minority - 2 per cent if Mr Clinton is re-elected, 10 per cent if Mr Dole becomes presi-dent - expected their taxes to

# Balaguer in pact with arch-rival

Political tension is rising in the Dominican Republic following a pact by the country's veteran politicians aimed at preventing the leader of last month's first round presidential elections from winning a run-off vote at the end of this month

The move has been described as "racist" by Mr José Francisco Peña Gómez, the black leader of the social democrat Revolutionary party, who got most votes in the first

Mr Joaquin Balaguer, the conservative president retiring after dominating the country's politics for 30 years, and Mr Juan Bosch, his arch-rival and once an avowed Marxist, have ended decades of animosity in

ended decades of animosity in agreeing to set up a coalition aimed at stopping Mr Peña Gómez from becoming president in August.

Mr Balaguer, who founded the Reformist party, and Mr Bosch, founder of the Liberation party, both octogenarians, have announced the formation of the National Patriotic Front, a coalition which will support coalition which will support Mr Leonel Fernandez, the Liberation party's candidate in the run-off vote.

Mr Fernandez received 38 per cent of the votes in the first round, coming second to Mr Pena Gomez who got 45 per cent, not enough to give him outright victory. The failure of any candidate to get a majority forced the contest into the second round,

Mr Balaguer said he and Mr Bosch had created the coalition to support Mr Fernández, in order to ensure that the presidency does not fall into "hande which are not necessarily Dominican". Mr Pena Gomez has

frequently been the subject of racial slurs from detractors, who stated, in clear

not a Dominican. The Dominican Republic and Haiti share the island of Hispaniola. Mr Peña Gómez has attacked the creation of the coalition to support Mr Fernández, saying it was as an attempt by the old guard to cling to the patronage of the Reformists, "This racist move with the creation of the Patriotic Front will be resisted," he said in a 90-minute radio broadcast on

Monday night. "It is nothing more than an effort to stop a man because of his colour, a because he is the son of the poorest sector of the country." The effort to prevent Mr Pena Gomez from becoming Reformist party. Mr Jacinto Peynado, the Reformist

candidate for the presidency, was not supported by Mr Balaguer and other party Political tension is rising in the country of 7.5m people. Party political clashes since

Fabruary have caused 11 deaths, and diplomats and businessmen in Santo Domingo, the capital, said yesterday that they expected

"There are already reports that militants of the Revolutionary and Liberation parties are preparing for more fights," said one business leader. "If Fernández wins the run off, Peña Gómez's supporters will not take it lying down." Mr Balaguer is retiring as part of electoral reforms which followed his controversial win by less than 1 per cent of the votes in elections two years ago.

Foreign observers and local parties said the president had retained office by extensive fraud. Pressure from the US led to the president's retirement and the holding of elections mid way in his term.

# Argentina cracks down on tax evasion

Argentina will struggle to meet fiscal targets agreed with the International Monetary Fund if it does not crack down successfully on the "national sport" of tax evasion, said Mr Domíngo Cavallo, economy minister.

Launching a series of measures aimed at reducing the evasion of personal taxes, Mr Cavallo said: "We still have the levels of deficit that we had in the second half of 1994 and

which grew in 1995." There would need to be a "big increase" in collection of income and July to help square the books, he

In an IMF deal reached last February, Argentina agreed to balance its budget in 1996, with an allowed deficit of up to \$2.5bn to be plugged by revenue from privatisations and the eale of concessions to manage nuclear and

hydroelectric plants. The treasury, which in the first quarter of 1996 was running e monthly deficit of nearly \$400m, is likely to miss its IMF target by \$4.4bn, according to Mr Pedro Lacoste of the

Alpha economic studio. Given an additional \$2bn shortfall at provincial level, the total deficit could reach \$6.4bn, or 2.3 per cent of gross domestic product, against 1.3 per cent

Among anti-tax-evasion measures to be adopted, Mr Cavallo said "certificates of good conduct" would be issued to those who had filed tax returns. Such certificates, which critics say would be bureaucratic and ineffective, would have to be presented when carrying out such transactions as the purchase of a house or foreign airline ticket. Those

that did not present their certificate would be investigated by the DGI internal revenue service, Mr Cavallo measures include

intensification of the so-called information comb. a data base against which tax returns will be labour will also be formed in an effort

illegal workers into the official, tax-paying, workforce.

to incorporate the estimated 3m

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Spectacular raids by tax inspectors had often not been backed with adequate or properly presented information: of \$800m worth of tax evasion discovered, only \$50m had account for a fraction of the total tax actually been collected.

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# Oil states prepare to draw Iraq back into Opec fold

Members of the Organisation of Petroleum Exporting Countries will begin deliberations in Vienna today on ways of bringing Iraq back into world oil markets without undermining

A number of delegates who arrived in the Austrian capital vesterday were generally positive about the prospect of awarding Iraq e quota to accommodate exports that will be allowed under an oil-forfood plan agreed with the United Nations last month,

The agreement allows Iraq to sell \$2bn of oil over six months. That could result in 700,000 to 900,000 or so barrels a day of Iraqi crude reaching world markets within a few

The positive signals even came from officials of recent Iraqi enemies such as Iran and Kuwait. One Iranian delegate said it was time the suffering of the Iraqi people be relieved.

But the question being asked
by many delegates yesterday
was whether Iraq could be accommodated at a time of rising over-production from Opec

you have over-production everything else is meaningless," said an Iranian official. A "meaningful" outcome from the meeting would need to include agreement on Iraq, a solution to large-scale quota cheating and a deal to apportion growth in oil demand

among member states, he said. In recent days some delegates have suggested that the issue of cheating could be largely overcome by rising worldwide demand for oil. There have even been suggestit, too, saw rising demand for tions, for example, that Opec oil, although Tehran offi-

date Iraq's partial return to the market, but also to allow for an increase in Opec's production calling of 24.52m barrels a day set in September 1993.

Some demand forecasts put the sustained call on Opec as high as 25m barrels a day. "The market is absorbing almost every barrel produce without any major stock build in the main consuming countries," said a Gulf Arab official this week. Iran yesterday said.

demand may prove strong cials suggested that it would enough not only to accommo average perhaps 25m barrels a day this year.

But other delegates were less certain. "To meet a price targetof \$16 to \$17 a barrel for the benchmark Brent cruda over the next year you simply have to cut back hard on over pro-duction," according to a delegate from one of the larger Gulf producers. He said oil prices could weaken sharply if 700,000 barrels a day of Iraqi crude was added to the market which is already absorbing up to 1.5m berrels a day in cur-

There also appears to be uncertainty among the group over the output potential of non-Opec producers, such as the UK and Norway. Some delegates scoff at suggestions that such countries can continue to expand capacity as rapidly as in recent years. They also won-der about the validity of fore-casts which show another

later this yeer. coming from?" asked one dele-gate. "The North Sea? It's not there. From where else? Brazil.

sharp rise in non-Opec output

The issue of Venezuelan over-production is a top priority for some countries. But it is not clear how hard Saudi Arabia, Opec's largest producer, is willing to push the issue. There has been talk among some delegations of trying to avoid a confrontation with Venezuela. "We want to avoid a conflict about quotas," appear more determined that Venezuela be forced to concede

publicly that it is "cheating on its quota," something which is



# Angola's rulers wake up to their own inadequacies

Problems are not all caused by civil war, writes Michela Wrong

Santos has confirmed what most Angolans suspected: that the government in Luanda is as much to blame for their plight as Mr Jonas Savimbi.

head of the Unita rebel group. In an attempt to tackle the worsening economic crisis, the president on Monday dismissed prime minister Marcolino Moco and all his ministers and suspended foreign exchange

been locked in civil war and the refusal by Mr Savimbi to recognise the government's lagitimacy has provided the ruling party, the formerly Marxist Popular Movement for the Liberation of Angola main threat (MPLA), with a convenient presidency.

How could the economy be restructured, the politicians argued, when the war required the maintenance of a huge army, when much of the interior remained cut off from the

he sacking of Angola's street children begging for cabinet and the governor of the central bank city is without electricity; President José Eduardo dos water supplies were halted

more than a month ago.

Last year's economic performance was the most disappointing on record, with Angola logging some of the worst socio-economic indica-3,700 per cent and a fifth of the population relied on aid to survive. The national currency, tha kwanza, now changes hands at 220,000 to the dollar, compared to 43,000 a month

The fact that such misery is not shared by all - in particu-lar an ostentatiously wealthy political elite that has profited from exchange controls and oil dealings - now constitutes the main threat to Mr dos Santos

Always nervous at siens of popular discontent, the presi-dent cancelled a trip to Japan last month when he heard that youths in one of Luanda's poorest areas were planning a demonstration and that anti-

Angola: legacy of the conflict years

To be the second of the second GDP growth (%) 3.3 -25.0 8.6 10

capital, when thousands of refugees needed support and when the lucrative diamondmining areas remained firmly

But with the laborious peace process presided over by the United Nations showing signs of achieving lasting peace, the weaknesses of the MPLA's position and the marked absence of a "peace dividend" are becoming obvious. The government's failure to see through structural adjustment reforms, which are being introduced with some success by other African nations, has been thrown into stark relief.

Diplomats recently warned that public dissatisfaction with official corruption and mismanagement had reached levels where a civil uprising, rather than second thoughts by a fickle Unita, constituted

the biggest threat to peace.

Few visiting Luanda today would guese it is the capital of Africa's second largest oil producer, an offshore asset the government has been able to tap throughout the war.

The coastal city, still graced by the elegant buildings of the Portuguese colonial era, has become a symbol of third. world decay, awash with rotting garbage and swarming with crippled fighters and government pamphlets were

Mr Fernando Franca Van Dunem, named as the new prime minister by presidential form a new government. Its mandate will be to revive reforms recommended by the International Monetary Fund and World Bank that have been repeatedly launched in the past, only to be under-mined by official foot-dragging.

While Mr Van Dunem, the former speaker of parliament is hardly regarded as a radical there are reasons to believe the attempt to move towards a free market economy will this time be embraced with more rigour.

Although the peace process is running behind schedule, at some stage this year a govern-ment of national unity, with key ministries allotted to Unita, is due to be formed. While Units remained an outcast rebel movement and the country was at war, the MPLA could appeal to Angolans'

patriotism.

But now that Units, which won 40 per cent of the vote in 1992 elections, is about to become a legitimate political player capable of trouncing the MPLA in future polls, the government can no longer afford a disappointing record.

# Wife of jailed Nigerian leader is shot dead

The wife of Chief Moshood Abiola, the jailed Nigerian political leader, died in hospital yesterday after being shot in the head by gunmen while driving near her home, AP

reports from Lagos. There was no immediate indication of the motive for the

Mrs Kudirat Abiola, 44, was an outspoken critic of the mili-tary government headed by General Sani Abacha. Her husband, a millionaire businessman who was widely believed to have won the 1993 presiden-( i tial poil, was jailed on a charge of treason in 1994 after he pro-

claimed himself president. In London, the British government called for Gen Abacha's government to investigate the killing promptly and

opened fire on Mrs Abiola'e white Mercedes-Benz yesterday morning as she was returning from a visit to liebu Ode, in Ogun state, an hour's drive

Witnesses said the car swerved off the road, and the gummen moved in to fire at

close range. The car's windshield and back window were shot out, the witnesses added. Mrs Abiola was reportedly detained for a few hours last

month for allegedly possessing

publications critical of the Abacha government. It has been under intenss international pressure to release Chief Abiola and scores of other political prisoners jailed since Gen Abacha's

# Forex dealers move to limit settlement risk

By George Graham in Sydney

The world's largest foreign exchange dealers have stepped up efforts to control the risk of a breakdown in the \$1,200m of payments that flow between them every day, and hope to have a central clearing house bank fully operational in less than two wars. than two years.

The Group of 20, an associa-tion of leading international banks which between them handle around 30 per cent of global foreign exchange trad-ing, estimates the cost of setting up the clearing house

bank at \$30m, and member banks believe it will not be dif-ficult to raise this amount. "There will not be an issue of money. You are not going to have a problem with 20 banks

getting \$30m," Mr John Reed, chairman of Citibank, a mem-ber of the G20, told 130 top executives attending the International Monetary Conference meeting in Sydney yesterday. Mr Reed said the project could be fully implemented from scratch in two years, "but there are some ways of not starting from scratch by boots-

trapping on existing systems".

The G20 plan is for an instantaneous settlement system, linked to national payment systems such as the UK's Chaps or the US Fedwire, in which a payment by one bank is immediately offset by a matching paymant from another bank.

Members would have to pay money into their accounts each day, and transactions would be debited and credited throughout the day. If one member. bank defaulted during the day, losses would be shared among

to be resolved, but a final deci-sion on the project is expected

Central hankers have been encouraging the private sector to come to grips with the risks involved in the foreign exchange settlement system. Because of differences

between time zones and the operating hours of national payment systems, banks often pay their side of a foreign exchange deal before they have received any payment in return, and can therefore be heavily exposed if their

The 1974 collapse of Bankhaus Herstatt, a small Cologne bank, with \$820m of uncom-pleted trades sent shock waves through the financial system. Since then foreign exchange volumes have bellooned and a collapsa today could be far

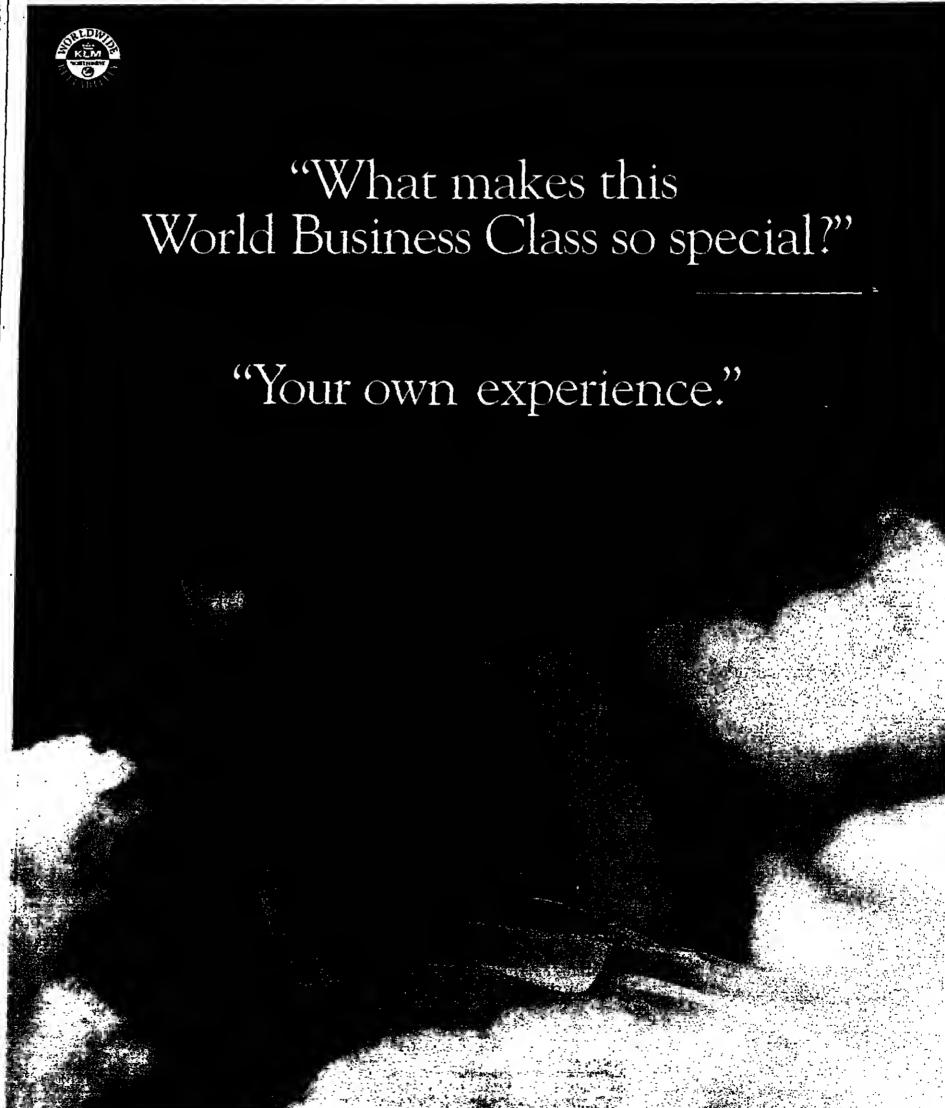
more damaging.
Soma commercial banks,
however, believe the risks of a major settlement breakdown too remote to justify spending

Mr Peter Cooke, chairman of the world regulatory practice accounting firm and a former

said yesterday that he hoped this view did not prevail. "Bigger banks than before can probably be allowed to fail than in earlier days, but it is quite another matter to say that the international financial

marketplace can tolerate a Mr Reed said that, while the risks were small, they were large enough to be taken very seriously by the largest banks. "The risk is not zero. It may

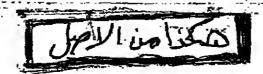
be point zero, zero, zero, but there is a significant digit," he



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# to appease finance critics

By Gerard Baker in Tokyo

The Japanese government once again disappointed critics of the country's bureaucracy last night with the publication of a set of half-hearted proposals aimed ostensibly at improving the conduct of monetary policy pens already. and financial supervision.

The plan, a draft document prepared by a policy committee of the ruling coalition, called for a few minor enhancements to the independence of the Bank of Japan from the powerful finance ministry. However, It was virtually silent on any plans to reform the ministry

The lukewarm nature of the report suggested the move was an attempt to bead off criticism of the government's han-dling of the country's financial crisis rather than a serious

attempt at reform. In the document, the governing parties call for the revision of a 54-year-old law which puts the central bank under finance ministry control. The most original idea was that of curbing the authority of the finance minister to dismiss senior central bank executives and supervise the bank's business. But since the law permitting such powers has never actually been exercised, revision seems unlikely to make a substantial change to the relationship between the two institutions.

By Edward Luce in Manita

In an extraordinary move the

Philippine supreme court yesterday

issued a statement rehutting allega-

tions that members of the country's

The "statement of court", made in

connection with a controversial tax-related case concerning Mr Lucio

Tan, chairman of Philippine Airlines,

highest indicial body bad received

Other proposals would force the central bank to report to parliament on the conduct of monetary and financial questions, and require the bank and the ministry to consult each other on monetary policy, something that largely hap-

It was not even clear when the proposals would be put before parliament. "The coalition parties are still divided over wheo to suhmit hills for revising the Bank of Jspan law to parliament, so we will finalise the proposal next week." said Mr Sbigeru Ito, a lawmaker who heads a coalition task force studying the feasibility of splitting up the ministry and dispersing its authority.

Bank of Japan officials have argued fiercely in recent weeks for greater independence from the finance ministry. Mr Yasuo Matsushita, the governor, has called for a revision in the law to bring it more into line with changing conditions in the

oation's economy. Public anger at the ministry has mounted recently following the collapse of eight financial institutions and a series of allegations of corruption by ministry officials.

Most criticism has been directed at the ministry's handling of the collapse of the country's housing loan companies, bankrupt under a pile of non-performing loans.

circulation which suggested judges

had received "lavisb brihes" in

exchange for a vote in Mr Tan's

The statement refers to an

"enabling" case which would decide

whether the government could press

charges against Mr Tan for alleged tax evasion, which be denies. Mr Tan

also denies all charges of corruption.

highly unusual act for it to make,"

"The supreme court statement is a

favour later this week.



PM's apology clears way for compensation, writes Emiko Terazono

apan's Asia Peace National Fund for Women, e "private" reparation fund set up by the government, was last night poised to sanc-tion a comprehensive compen-sation deal for 200 so-called "comfort women" who provided sexual services for the Japanese Imperial Army dur-ing the second world war.

Its move follows prime minister Ryutaro Hashimoto's announcement this week that be would apologise to "comfort women". He acted in spite of pressure from some in his own Liberal Democratic party and rightwing extremists who insist the women were volun-

Mr Hashimoto's decision, in effect, cleared the way for the fund to press ahead with its compensation package, which bad already been delayed because of his foot-dragging. Last month, the fund post-poned a formal announcement

of compensation because of the prime minister's equivocation, which has caused ill feeling among former "comfort women" and among Japanese promoters of the fund. Mrs Mntsuko Miki, widow of former prime minister Takeo

Miki and a leading campaigner for the "comfort women", resigned from her post as a fund-raiser for the fund last month after the prime minister refused then to write letters of

apology on Japan's behalf.
I was very disappointed by Mr Hashimoto's refusal to apologise and decided I could not work with him," said Mrs Miki, regarded as the conscience of the LDP, the largest ruling

Philippine court denies top judges took bribes

court stepped in."

any other in [the Philippines'] recent

history, which is why the supreme

The case hinges on whether the

government breached Mr Tan's legal

rights hy launching an investigation

into his tax affairs without giving

Should the ruling go against Mr Tan, government lawyers would file a

criminal prosecution against him

him 30 days' notification.



South Koreans in Seoul chant anti-Japanese slogans at one of a series of protests in recent years over 'comfort women'

The fund is likely to agree on a payment of Y2m (\$18,500) — and haggling over how much each to the 200 women — in should be paid to each claim-South Korea and other parts of Asla - though at talks late last night there was division on the figure. Compensation by the fund, which was set up by the government last summer, is already behind schedule. It was supposed to start payments by the end of last year. hut the lack of funds - it has

has generated more controversy than 1992. The government's case would

ant have delayed reparation.

be based on its contention that Mr

Tan set up "gbost" marketing arms, enabling him to under-declare pro-

duction costs at his tobacco and

brewery subsidiarles to minimise

"That [poison pen] letter states, in essence, that three members of the

court's first division were lavishly bribed by Lucio Tan." The statement

The supreme court statement said:

vaine added tax payments.

Although the Japanese government in 1991 admitted official involvement in conscription of Korean, Dutch and Filipino women, it has maintained that its obligations were settled by the signing of peace treaties after the war.

tional treaties and apologies are separate issues. She also claims the Japanese govern ment's denouncement of a recent report on "comfort women" by the UN Human Rights Commission, which called for direct government compensation, had also

Ironically, the departure of Mrs Miki, dubbed "Woman Prime Minister" due to her political influence during ber husband's rule, seems to have helped rekindle debate and a push for a solution.

Despite this week's develop-ments, the controversy is unlikely to go away. Members of the LDP oppose compensa-tion because of the lack of official records on recruitment of "comfort women". Even histo-rians' estimates of "comfort women" vary, ranging from 80,000 to 200,000. Mr Tadashi Itagaki, an LDP member, is reported to have said at a recent party meeting that wartime sex slavery was fabricated. Rightwing extremists have also campaigned against compensating former "comfort

Moreover, opposition over the fund has come from support groups of former "comfort women" demanding formal government compensation with an official apology. Some supporters allege Mr Bunbei Hara, the former upper house pensation fund, had been responsible for destroying offi-cial papers, including those concerning "comfort women" during his days in the home affairs ministry during the war

The development comes in the

wake of a report published in Ger-

many this week hy Transparency

International, a multinational organ-

isation dedicated to curbing corrup-

tion in international business,

ranking the Philippines as one of tha

most corrupt countries in the

leading Chinese-Filipinn taipans,

ing a bank and the country's second

owns a number of business

Mr Tun, who is one of the country's

world

ASIA-PACIFIC NEWS DIGEST

# Malaysia growth slows to 8.3%

Malaysia's economic growth alowed to an annual rate of 8.3 per cent in the first quarter of this year amid signs that consumer spending moderated but foreign investment projects were still being approved at a fast clip.

The 8.3 per cent growth rate was down from 9.2 per cent in the preceding quarter and 10.2 per cent in the first quarter of 1995. Malaysia has forecast 1996 gross domestic product growth will be 8.3 per cent, against 9.5 per cent in 1995.

Securities analysts said it would be premature to assume that dangers of overheating have significantly receded. Such a judgment could not be made until later figures confirmed that growth is indeed slowing, they said.

Bank Negara Malaysia, the central bank, attributed the slowdown mainly to an expanded holiday period in February. However there were signs, too, that rapid consumer spending, which the government has discouraged, is easing

Sales and service tax collections recorded slower growth of 5 per cent and 4.4 per cent respectively, from 11.5 per cent and 18.7 per cent in the fourth quarter of 1995. Sales of passenger cars rose at 17.8 per cent, from 24.7 per cent.

The central bank said the main engines of economic growth were the manufacturing, mining, construction and services industries. It added that inflation hit an annual rate of 3.4 per cent in the first quarter, the same as for the whole 1995 year. Despite chronic shortages of labour and annual wage rises typically of over 10 per cent for skilled personel, approved James Kynge, Kuala Lumpu

#### India sees imports surge

India recorded a \$175m trade deficit for April, the first month of India's new fiscal year, as an oil-led surge in imports outstripped disappointing export growth for the month. Imports of \$2,98bn were 32 per cent higher than the same month a year ago, with oil and related product imports at \$772m more than 49 per cent up on April 1995.

Exports grew by 13 per cent on a year ago to \$2.8hm. according to the Indian commerce ministry's provisional estimates. April's export level a year ago of \$2.46bn then represented a growth of 24 per cent.

The April trade gap compares with a surplus of \$207m for the month in 1995, but is well below the average monthly deficit for 1995-96 fiscal year of \$375m.

The Indian commerce ministry said that non-oil imports continued to be dominated by industrial inputs and capital Mark Nicholson, New Delhi

#### Japan downs US attack aircraft

A Japanese navy destroyer accidentally shot down a US carrier-based military aircraft during exercises off Hawali, but the crew of the aircraft were rescued, a Japanese defence ministry spokesman said yesterday.

The 4,200-tonne destroyer Yugiri fired its anti-aircraft gun and shot down a US Navy A-6E intruder attack aircraft while conducting manoeuvres, the spokesman said. The two crew members of the downed intruder were rescued by a helicopter from the Yugiri and taken to the US carrier Independence, but their condition was not known, the spokesman said.

The Yugiri was part of the Japanese navy's eight-vessel contingent taking part in RIMPAC exercises in waters pear Hawaii with ships from South Korea, Chile, Australia, Canada and the US. The exercises are held once every two years. The ministry spokesman said the Intruder was towing n target drone during the day's drills when the gunner hit the



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#### largest hrewery. Further arrest in S Korea probe

By John Burton in Seoul

A senior South Korean finance ministry official was arrested yesterday in the country's stock market bribery scandal, but prosecutors indicated their investigation would soon be

Mr Han Tack-soo, head of the Finance Ministry's treasury hureau, was accused of accepting Won50m (\$63,500) for help-ing Korea Data Systems to gain a listing last November in splte of the company's poor

Mr Han allegedly gave Won10m to Mr Paik Won-ku, the chairman of the Securities Supervisory Board, who was arrested on Sunday on similar corruption charges.
News that the prohe

appeared to be at an end led to a sharp rebound in the stock market, with the general share index returning to the level it was on Sunday when the scandal broke.

The bourse had been shaken hy allegations that government

ings on the Seoul exchange. More than 200 companies are

officials had accepted bribes for granting approval of list-

waiting to issue initial share offerings on the Seoul bourse. However, the government has strictly limited the number of new share issues in order to prevent a surplus of listings from depressing share prices. The companies involved in

the bribery scandal are believed to he mainly small concerns which desperately need to raise capital from the stock market or else face financial problems.

Prosecutors said that they

might investigate two or three other officials, but otherwise no further arrests are expected to be made.

President Kim Young-sam blamed vague procedures governing stock listings for the scandal and ordered that more transparent rules be introduced.

But analysts believe that the government wants to limit the extent of the investigation because of fears it could disrupt an already fragile market worried about a growing trade

# Mr Ma takes on Taiwan's 'deep culture of corruption'

Laura Tyson on the popular justice minister with an unpopular brief

t a diuner party, Taiwan's justice minister was reminiscing with legislators about the country's parliamentary elections last December. One thanked him for cracking down on the once widespread practice of vote-buying. "Mr Ma, you saved me T\$100m (US\$3.6m)," he said. Another leaned across the table and sald: "Mr Ma, you saved me T\$200m!"

Not everyone is so apprecia-tive of Mr Ma Ying-jeou, the 45-year-old Harvard law school graduate who tops ratings among government officials in public opinion polls. When he first took over the ministry in 1993, he was pitied. Now he is

feared.
I think our investigators and prosecutors have really done their job," he said in an interview. "And in doing so. our ministry and myself have created a lot of enemies and they seek my departure as

Mr Ma vows to change what he calls Taiwan's "deep-rooted corruption culture". He says he wants to make corruption merely "a fact of life, not a way of life". During his three-year tenure, he successfully took on electoral bribery and drugs, which led to thousands of convictions and a substantial reduction in such crimes. Voter turnout was down 5 per cent in the last parliamentary elections, considered a sign that candidates had cut back on zou lu gong to voters - a "fee" just for walking to the

polling booth. And illegal amphetamine labs have transferred their operations from Taiwan to China, driving the local price so high most users have been priced out of the

Using these campaigns as a blueprint, he has now mapped out a strategy to tackle organised crime - a mission which has struck a little too close to home for his own ruling Nationalist party. "Taiwan must undergo a major transfor-mation in this regard in the

next few years, otherwise we

politicians, powerful businessmen and underworld figures. Members of the underworld have become elected representatives of our government, at the local, provincial and national levels. This is a problem that is well known to our citizens," said Mr Ma. "A thorough house-cleaning is vital to regain the trust of our people."

who once ranked just behind a local movie star and a Canton-

ese pop star in a survey asking

Taiwanese women whom they

found most attractive, out of the limelight. Still others are

The scourge of vote buying and drug traders wants corruption to be just 'a fact of life, not a way of life'

cannot say we are a truly dem-ocratic society in which the rule of law is respected." Mr Ma said. "If we don't clean up our society, I argue we will lose our competitiveness. The economics minister, Mr

Chiang Pin-kung, recently admitted corruption was a drag on the economy. Whether Mr Ma is reappointed in a cabinet resbuffle expected this week will be a crucial test of how serious Taiwan's first democratically elected president, Mr Lee Teng-hul, and the Nationaliats are about stamping it out.

Some of Mr Ma'a enemies are senior members of his own party. Others are political rivals who want to push the photogenic cabinet minister,

Mr Ma is dissatisfied with police response to crimes related to the so-called triads, or organised crime groups.

The current campaign hy
police against the underworld seems to have been confined to small potatoes - the cases that can easily show their performance. But they do not target big shots," he said.

He has proposed to the ruling party a comprehensive strategy of attack involving hoth legal and operational measurea. "In the next 19 months, we will have no elections. That is a good opportunity for us to get the necessary laws passed and to take vigorous action to clean up this society. This is a critical moment."

nforcement and the integrity of government officials has fallen sharply recently in the wake of a spate of controversies highlighting gangster influence in politics. One was a bid-rigging scheme allegedly involving the Bamboo Union Gang, one of Taiwan's biggest triads, in an airport expansion project. An executive of a leading Nationalist run company and four parliamentary legisla-tors including the Nationalist party whip are among those being investigated. Gangs have become increa

ingly public in their activities. At the February funeral of the assassinated leader of the Four Seas Gang, an estimated 10,000 gangsters joined a funeral procession across the capital. Numerous senior politicians attended or sent condolences.

Here, the underworld bas been more involved in public construction projects than in drugs, which is unique," Mr Ma said. "Public construction projects usually involve large sums of money, so they are as lucrative as or more so than

drug trafficking. First, he says, laws must be changed to make the formation of, and participation in, an organisad crime organisad

itself a crime. Next, the government should carry out an island-wide swoop. "We should do it in one shot, on a national scale, so they don't bave time to conceal their illegal activities...and it should be aimed at the hig abots," Mr Ma said,

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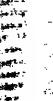
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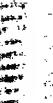
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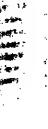


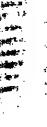


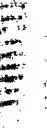
























WORLD TRADE NEWS DIGEST

# Toll-free calls go worldwide

Businesses offering freephone services will be able to register a single worldwide "toll-free" number from early next year, valid for all countries and telecoms carriers. The new system, to be operated by the International Telecon in Geneva, is expected to boost the growth of freephone operations, especially in Europe and the Asia-Pacific region where the need to register a separate freephone number in each country has hampered development. Freephone facilities, which charge the cost of calls to the

recipient, are used by businesses to promote their services or encourage telephona orders for their products. In the US, where the service was ploneered in 1966, freephone numbers attract around 100m calls a day and turn over \$100bn worth of business each year. US companies hold around 90 per cent of the world's 9m freephone numbers.

The ITU will maintain a global registry of international freephone numbers allocated on a first-come first-served basis from early next year. Numbers will have an international prefix (such as 00) followed by 800 - the agreed international freephone code – and an 8-digit global subscriber

#### Vietnam picks airport shortlist

Vietnam has shortlisted three foreign companies for a contract valued at about \$180m to upgrade Vietnam's busiest airport. Tan Son Nhut in the southern industrial centre of Ho Chi Minh City. The companies are Japan'a Maeda Group. Dywidag-Euromill of Germany, and Airport Group
International of the US. The project involves building a new

terminal able to handle up to 10m passengers a year.

Two other bids, one by a Saudi-British consortium including UK construction engineers Balfour Beatty and another by a second US group, were rejected. Industry officials said the Saudi-British package falled as it required the Vietnamese government to borrow the entire project amount on commercial terms, whereas the others involved joint ventures with foreign equity input. Jeremu Grant, Hano

#### Dynamic Singapore is praised

Singapore's "dynamic and open" economy won praise yesterday from trading partners in the World Trade Organisation, just a week after the city state was rated the world's most competitive country by the World Economic Forum. A report by the WTO secretariat on Singapore's trade policies and practices attributes its rapid economic development to open trade, prudent economic management and its location in the centre of one of the world's fastest growing regional markets.

With its political stability, well developed infrastructure. high savings rates and ample foreign investment, Singapore is one of the world's strongest economies," the WTO report says. The report notes Singapore is increasingly an economy

based on services, which account for more than 60 per cent of GDP. Finance, transport, telecoms and tourism have expanded rapidly, one reason why Singapore is under pressure from the US and other western nations to go further in liberalising these sectors, especially financial services. Industrial tariffs are due to fall over the next few years from an average of 12.4 per cent to 5.1 per cent. Frances Williams, Geneva

■ Honda has started building its \$100m car plant near São Paulo in Brazil. Japan's third-biggest carmaker aims to make about 30,000 Civic models a year by 1999 for sale throughout South America. Haig Simonian, Motor Industry Correspondent

#### **BAe wins** Kuwaiti missile contract

By Bernard Gray, **Defence Correspondent** 

British Aerospace has beaten Aérospatiale of France to an order for \$100m of anti-ship missiles to equip Kuwait's new fast patrol craft. The order is a significant victory for the Brit-ish defence company, since the Sea Skua missile will be fitted to a French-built ship for the first time and overturns expec-tations that Aérospatiala would win the order.

Sea Skua impressed the Kuwaiti authorities during the Gulf war by sinking Iraqi shipping after being fired from Royal Navy Lynx helicopters on patrol in the Gulf. Of 26 missiles fired, 19 acored hits and 15 ships were sunk.

A combination of combat-

proven performance and price seems to have won the order for BAe. Tha contest was keenly fought between the two potential suppliers, with tha prime ministers of both countries lobbying heavily for the contract.

Sea Skua was originally developed as a helicopter-launched light anti-ship missile with a range of about 15km, and is in use in thet role with six navies, including Britain's Royal Navy. BAe has invested in adapting the missile for launching from light patrol craft. These are not large enough to house traditional anti-ship missiles, such as the French Exocet or the US Har

Now Sea Skua has broken into this surface-launch market, it may be in contention for other orders. Fast patrol craft are in use in a number of Gulf and Pacific Rim countries with expanding navies.

The order comes as confidence in the Gulf arms market is picking up. Following a rush of orders after the Gulf war there has been a lull. But improvements in the oil price and concerns about potential threats from Iran have renewed interest in weapoury.

BAe said last night it was confident it had won the order but that it had not yet received

# European rocket's dominance of world launch industry now at risk

# Explosion shatters Ariane's hopes

By Michael Skepinker, David Owen and Clive Cookson

nvestigators will need time to discover the precise cause of yesterday's failure of the maiden Ariane 5 flight over French Guiana. But the blow to the morale and prestige of the European space industry is immediately clear.

An explosion in the international satellite industry is nothing new or, in the long run, necessarily damaging in 1994, Arianespace, the French-based 58-company consortium behind yesterday'a launch, suffered two crashes. It still managed to retain its position as the world's leading satellite launcher, with about half the market.

The real blow from yesterday's crash is that it was Ariane 5 which failed. The new launcher is central to Europe'a drive to continue its leadership of the satellite launching industry into the 21st century against competition from the Americans, the Russians and the Chine

Ariane 5 stood for European, and particularly French, pre-eminence in an industry once dominated by the US. Last year, more than 13,000 peopla visited "Ariane City", the Ariane 5 production facility on the banks of the Seine. Ariane 5, which cost \$7bn to

Arianespace said that Ariane develop, offered satellitelannching customers lower costs, a larger payload, and -Arianespace said - greater reliability. Mr Francis Avanzi,



Arianespace's chief operating officer, said earlier this year that the consortium wanted to launch three Ariane 5 rockets next year, four in 1996 and five

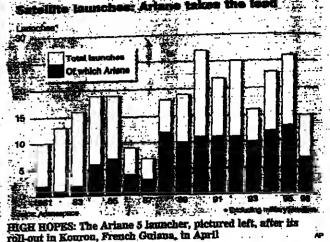
At the end of the century. launches of the existing Ariane 4 rocket would cease and production of Ariane 5 would increase to eight a year. Ariane 5 was designed to launch two satellites with a combined weight of 5.9 tonnes or one eighing 6.8 tonnes. Ariane 4. with a payload of 4.8 tonnes, was becoming insufficient now that the average telecommuni-cations satellite weighs three

5 was a radically new design. The heart of Ariana 5 is a gigantic new "cryogenic" main stage rocket, which burns 25 tonnes of liquid hydrogen in 130 tonnes of liquid oxygen, during its 10-minute burn time.

Adding thrust to the main stage are a pair of new solidfuel boosters - 20-times larger than their counterparts in Ariane 4. Each one burns 237 tonnes of hydrocarbon fuel for

designed to be much more reliable than its predecessors, because it was originally expected to lift not only communications satellites but also peopla into orbit It is a simpler design than

Ariane 4, with fewer engines, and - for the first time - its main stage can be fired and tested on the ground to ensure that it is working perfactly



accident is that the two-year lead that Arianespace hoped to have before the arrival of a string of potentially tough new competitors will be truncated. The newest challenger to Arianespace is International Launch Services, a joint ven-

ture formed by Lockheed Mar-tin, the US defence group, and two Russian companies -Khrunichev Enterprise and RSC Energia. Lockheed Martin makes the Atlas launcher, 11 of which were launched anccessfully from Florida last year. The Russian companies offer the

larger Proton rocket. By join-ing forces, the new alliance hopes to market both launchers around the world. McDonnell Douglas, the US aerospace company, is develop-ing the Delta III, a rocket simi-

lar in size to the Atlas. The first launch is planned for 1998. Boeing, the largest US aircraft maker, has teamed up with Russia's RSC Energia, Kvasrner of Norway and NPO-Yuzhnove of Ukraine to launch satellites from a platform in international weters in the

But Mr Stephane Chenard, senior space analyst with Euro-consult, the Paris-based consulting firm, said the extent of the setback to Europe's space operations should not be overstated. "There will be some delay in the programme, some more money will have to be spent, but everyone knows it will work eventually," he said. People hardly remember today that the second and fifth Ariana 1's blew up. These

# Scientists aghast as 10 years' work is lost

By Clive Cookson, Science Editor

The explosion of Ariane 5 is a setback not only for Europe's commercial satellite launching programme but also for space science. The \$500m Cluster mission to study the effects of: the "solar wind" on the earth was wiped out. Arlane 5's maiden flight was

intended to launch a small flotilla of four identical spacecraft, the Cluster craft, to fly around the earth in a tetrahe-

dral or pyramidal formation. They would have provided scientists with their first three-dimensional view of the solar wind. This stream of electrically charged particles from the sun has a profound effect on the earth, its atmosphere and magnetic field - causing effects ranging from the beau-

tiful Northern lights to magnetic storms that disrupt radio communications. There was no back-up to of scarce government research grants had been spent on Clus-Chaster. As Mr John Credland. the European Space Agency's

Cluster project director, said before launch: "We are putting ter, a group of 50 space scienall our eggs in one basket." Mr Credland said yesterday, Laboratory in Oxfordshire. after the explosion, that there was no insurance because

maiden launch, rather than a commercial satellite. Scientists, some of whom had devoted almost 10 years to Cluster experiments, were devastated. In the UK, where £45m

Cluster was an experimental

scientific mission on Ariane 5's

tists saw the disaster on a live video link from French Guiana to the Rutherford Appleton

"When it happened, there was a shell-shocked silence for at least two minutes," said one of those present, Mr Nick Flowers of the Mullard Space Science Laboratory, part of University College London. "The feeling of loss is great."

His colleague Professor Alan Johnstone said: "It cannot be repeated. There is no prospect tested, which it was."

now, even if the money could be found, of turning round and doing it again. We are just going to have to grin and bear it." He denied that it was foolhardy to risk such an important mission on the maiden flight of a new rocket. "There is always a certain amount of risk attached to these sort of programmes," said Prof Johnstone. "Yes, it was a new vehicle, but we knew that it was going to be very carefully engineered and thoroughly



#### ÁPV RT.

**HUNGARIAN PRIVATISATION** AND STATE HOLDING COMPANY

#### INVITATION TO BID

The Hungarian Privatisation and State Holding Company (hereinafter: Caller or APV RL) invites a one round open tender for the purchase of the state-owned registered shares guaranteeing equal shareholders' rights representing 91,58 percent ownership share with par value of HUF 732,603,000 of Bakony Füszén Rt., (hereinafter Company) / 8000 Székesfehérvár, Sóstó Repülötér, (Trade Registry no.: 07-10-001034/04) established under Act XIII. of 1989.

Equity of the Company:

Registered capital of the Company: HUF 800,000,000 HUF 1,219,435,000

ÁPV RL Dominancia Váltó Kft.

Local governments

HUF

HUP

40,000,000 20,190,000

739.810.000

5,00 percent

92,48 percent

Bids can only be submitted for the whole share package.

3. Bids shall be submitted to the address specified below in a closed unmarked envelope in five copies in Hungarian. Foreign hidders are allowed to submit their bids also in English or in German, but even in this case the Hungarian version will rule. Bids shall be submitted in person or by a proxy in the presence of a notary public within the specified time.

The following text must be written on the envelope:

"PÁLYÁZAT: BAKONY FÜSZÉRT ET."

4. The bidder shall mark the original copy with the inscription "EREDETI". If the bidder fails to do this, the Caller will choose one from the copies submitted which further on will function as the original. Should there be any discrepancies among the copies the copy so marked shall rule.

5. Desdline for submission: August 28, 1996, between 12.00 and 14.00 hours Place of submissions APV Rt.

H-1133 Budapest, Újpesti rkpt. 31-33.

6. At least 80 percent of he purchase price is to be paid in cash, the remaining sum can also be paid by cash or compensation coupons. The deadline for the payment in full of the purchase price cannot be longer than 30 days. The Caller will not accept deferred payment or payment in instalments.

Foreigners can only bid in currencies accepted as convertible by the National Bank of Hungary (MNB), taken into account by the Caller at the effective foreign exchange purchase rate officially published by MNB at the time of the submission deadline. Neither foreign private individuals, nor economic associations in majority foreign ownership registered in Hungary are allowed to pay in compensation coupons. Foreigners can only use compensations coupons acquired in their own right. Compensation coupons are taken into account by the Caller at a rate of 174,2%.

7. Bidders shall undertake to maintain their bids for 120 (one hundred and twenty) days from the submission deadline.

8. To prove their intention to purchase bidders shall pay or transfer HUF 10,000,000 (ten million) as retention money until the submission deadline to the account opened for this purpose by APV Rr. with MKB (Hungarian Foreign Trade Bank) specified in the detailed tender invitation. The Caller shall dispose of this sum in line with the rules on retention money.

9. Following the evaluation the final decision is taken by the Caller. The Caller reserves the right to declare the tender unsuccessful. 10. The detailed tender invitation and the information memorandum containing the most important economic data from the point of view of the bid prepared by the Company constitute an integral part of the present tender invitation. The purchase of the information memorandum including also the detailed tender invitation for HUF 20,000 + VAT at the Customer Service of APV Rt. against a declaration of confidentiality is subject to submitting the bids. The tender documents are to be purchased by the bidder (in case of a consortium, by one of the members) personally or through a proxy directly from the Caller, which the Caller shall attest by issuing a certificate.

The proxy shall attest his power of representation or the extent of his power of representation with a notarial document or with a private contract having full conclusive force. The existence of the mandate is to be checked by the Customer Service.

11. Information on the tender, as well as on the major data and characteristics of the Company can be obtained from:

Information concerning the Company: CEO Mr. Istvan Nagy on the premises of the Company Tel.: (36-22) 316-410

Information concerning the tender: Portfolio manager Mrs. Both, Zsuzsa Kellner Address: APV Rt. Tel.: (36-1) 269-8600, ext.: 2193

# Investment flows US vows to quit surge to record shipping talks

Worldwida flows of foreign direct investment soared by 46 per cent last year to a record \$325bn from \$222bn in 1994, according to preliminary estimates by the United Nations Conferenca on Trada and Development.

Recovery from recession and a new wave of cross-border mergers and acquisitions boosted inflows of foreign direct investment (FDI) to industrialised countries to \$216bn in 1995 from \$130bn the previous year. The US led the way with record inflows and outflows of \$75bn and \$97bn respectively, compared with \$49hn and \$46bn in 1994.

Inflows to developing countries also climbed, though less teeply, to an all-time high in 1995 of \$97bn from \$86bn in 1994. China again accounted for the lion's share, attracting inward investment of \$38bn last year against \$34bn the year before. FDI flows to central and eastern Europe dou-bled to an estimated \$12bn last

Releasing the figures yesterday ahead of publication of its annual World Investment Report this summer, Unctad says the surge in FDI reflected recovery from economic recession earlier in tha decade underpinned by global competitive pressures.

These pressures were push-ing all companies, including a growing number of transna-tional companies (TNCs) based in developing countries, to become more active internationally through FDI or other means. "The unprecedented level of global FDI flows in 1995 suggests that the speed of globalisation of production by TNCs may be accelerating,

In particular, a resurgence of activity involving cross-border mergers and acquisitions (M&As) had boosted outward investment on both sides of the Atlantic Outflows from Germany,

anch as those from the US,

Unctad adds.

more than doubled from \$14.5bu in 1994 to \$35.3bu in 1995. Outward investment from Britain rose by half from While there were a number

medium-sized enterprises had also entered the M&A market.

\$25.8bn to \$37.8bn. of large-scala M&As in the pharmacenticals, chemicals and financial services industries that marked a process of consolidation in industrialised countries; many amail and

according to Unctad. Unlike the previous M&A boom in the late 1980s, fuelled by the prospect of financial advantage, recent M&A activity was aimed at strengthening companies' "core competen-cies", Unctad suggests.

The US yesterday said it had no intention of reversing its earlier decision to withdraw eralising international ahip-

Trade Organisation in Geneva rejected as inadequate a comprehensive package of marketopening proposals presented yesterday by the European Union and 28 other countries representing most of the important maritime nations in the WTO.

Washington said last month that it would not be submit-ting a liberalisation offer in the talks, which are due to end on June 30, thereby threatening them with collapse. However, the EU and other trading partners had hoped to persuade the US to reconsider its position by putting together a

tempting package. Mr Hans Beseler, the EU's chief trade negotiator, said the package would substantially improve access to maritime services markets and included commitments on liberalising multimodal (door-to-door) transport services, which the US had demanded.

But after the meeting, Mr Andrew Stoler, deputy US ambassador to the WTO, said: "What is on the table from the others doesn't represent a sub-

access and is no basis for the US to table an offer." Negotiators are scheduled to meet again on June 17. Washfrom multilateral talks on lib- ington has been given until June 14 to decide on its ping.

US negotiators at the World not forthcoming the package

on the table also lapses. The 42 participants in the talks (the EU counting as one) have deliberately avoided discussing what should happen to the negotiations if the US stays ont of a multileteral deal. However, both Canada and the US said yesterday that perhaps now was the time to start considering the options.

These include trying to reach an accord without the US, as in the financial services negotiations last year; postponing the deadline, as in the telecoms talks in April; coming to an agreement outside the WTO among like-minded countries; or simply letting & the liberalisation effort drop. Mr Beseler said yesterday that a deal in maritime ser-

vices was important for the credibility of the WTO and the multilateral trading system. US negotiators bave long admitted privately that their room for manoenvre was restricted by the difficulty of persuading small but powerful maritime unions to accept a global liberalisation deal in a

US presidential election year.

Agreement on car-factory sale and refit helps to ward off job losses

# Portugal strikes Renault plant deal

Portugal is abandoning a Es58bn (\$338m) claim for damages against Renault following agreement over the future of a Portuguese plant which the French vehicle manufacturer had threatened to close with the loss of 760 jobs.

Under the terms of an accord signed yesterday, Portugal is to pay FFr85m (\$6.8m) to acquire Renault's 70 per cent holding in the plant at Setübal, 50km south of Lisbon, which it plans to modernise and sell to another international vehicle manufacturer. Mr Augusto Mateus, Portugal's economy minister, said yesterday that in Portugal, including 30 per negotiations had begun with cent stakes in its commercial

Setubal plant, which makes Clio cars. Portuguese newspapers asid the companies included Chrysler of the US. FFr68m to the cost of reconverting the plant, in addition to a maximum of FFr87m if the change involves any job losses. Renault also guarantees to support the manufacture of Clios in Settibal until July 1998. Pro-

review next March. The French group is to pay a further FFr356m to acquire the Portuguese state's minority holdings in its other operations groups from Asia and the US network and in a component

plant at Cacia. Renault will Talks between Renault and also invest in equipping the Cacia plant, whose output includes gear boxes and C3G Renault is to contribute produce more sophisticated components. This will creata 180 new jobs in 1997. Renault's investments in Setubal and Cacia are to be supported with incentives from Portugal.

"This agreement is a guarantee that Renault will maintain duction is to be at a rate of 110 a sustained, competitive presence in Portugal, Mr Louis cars a day until a further Schweitzer, Renault's presi-

The deal marks a success for Portugal'a socialist government, which made reaching a mutually beneficial settlement came to office six months ago.

the previous centre-right goveroment broke down last September after the French group engines for the Twingo car, to refused to back down on a plan to close tha Satubal plant because of excess production and falling consumer demand

for the Clio. Portugal argued that Renault had undertaken to keep the plant operating indefinitely when it signed an investment contract in 1977 and had received more than Es48bn in investment incentives as well as making Es24bn in profit in

the 13 years to 1993. The damages claim lodged with the international arbitration tribunal in Geneva is now with Renault a priority when it being dropped by mutual consent of the two parties.

# Is everything bad for us? Or are we getting things out of proportion?

Almost every day, it seems that one thing or another has been discovered to be some kind of health risk.

In one scientific study, even the ordinary biscuit was linked to heart disease.

But as common sense suggests (and scientists confirm) not everything described statistically as a risk is a meaningful risk.

For example, lots of people have been persuaded that second-hand tobacco smoke is harmful.

Not surprising, perhaps.

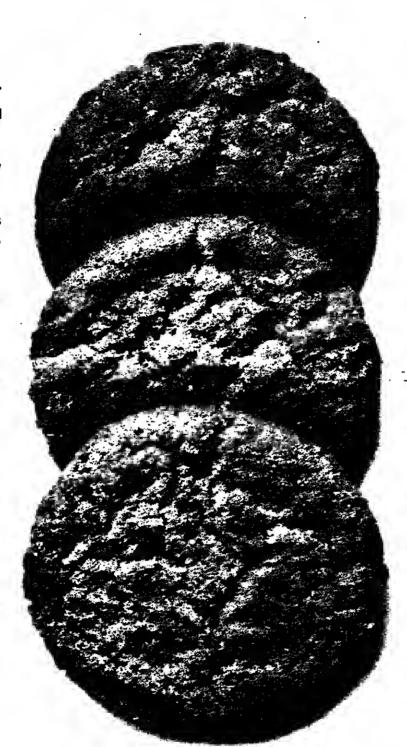
rk is lost

After all, we recognise that smoking itself is a risk factor for certain human diseases and that some people find second-hand tobacco smoke unappealing and unpleasant.

But what about second-hand tobacco smoke? is it really a meaningful health risk to people who've chosen not to smoke?

Not, we think, if you look at the evidence.

The United States Environmental Protection Agency recently conducted a major review of studies on the risks of second-hand tobacco smoke to non-smokers. These studies typically involve non-smokers living with smokers over a long period, such as 20 years.



And this review put the risk of lung cancer from second-hand tobacco smoke at a level well below the risk reported by other studies for many everyday items and activities.

And below, in fact, the risk to health that one other study reported for eating one biscuit a day.

As the table below shows, many everyday activities have been statistically associated at one time or another with apparent risks to health.

But reputable scientists say that weak associations aren't necessarily meaningful.

So there's no big campaign to persuade you to give up your daily biscuit.

Nor is there any sound justification for a campaign against second-hand tobacco smoke.

If you'd like to decide for yourself, please write to us at Philip Morris Europe S.A., c/o P.O. Box 107, 1000 AC Amsterdam, The Netherlands or fax us on 00 31 20 671 98 89.

We'll send you the evidence about secondhand smoke.

We believe you'll find the case convincing.

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Everyday Activities	Reported Relative Risk*	Reported Health Effect	Scientific Study Reference
Diet highest in saturated fat	6.14	Lung cancer	Journal of the National Cancer Institute, Vol. 85, p.1906 (1993)
Non-vegetarian v vegetarian diet	3.08	Heart disease	American Journal of Clinical Nutrition, Vol. 31, p. \$191 (1978)
Frequently cooking with rapeseed oil	2.80	Lung cancer	International Journal of Cancer, Vol. 40, p. 604 (1987)
Drinking 1-2 glasses of whole milk per day	1.62	Lung cancer	International Journal of Cancer, Vol. 43, p. 608 (1989)
Eating one biscant a day	1.49	Heart disease	tancet Vol. 341, p. 581 (1993)
Drinking chlorinated water	1.38	Rectal cancer	American Journal of Public Health, Vol. 82, p. 955 (1992)
Eating pepper frequently	1.30	Mortality	American Journal of Epidemiology, Vol. 119, p. 775 (1984)
Exposure to second-hand tohacco smoke	1.19	Lung cancer	U.S. Environmental Protection Agency (1992)
High vegetable diet	0.37	Lung cancer	International Journal of Epidemiology, Vol. 25, Suppl. 1, p. 32 (1996)
High fruit diet	0.31	Lung cancer	American Journal of Epidemiology, Vol. 133, p. 683 (1991)

# Philip Morris Europe S.A.

Second-hand tobacco smoke. Let's keep a sense of perspective.

'Shareholders are getting less as employees are getting more,' says chairman of Barclays

# Bank chief criticises pay for top traders

By George Graham in Sydney

Banks are storing up trouble by paying their high flying traders too much and their shareholders too little, one of Britain'e leading bankers warned yesterday.

Mr Andrew Buxton, chairman of Barclays Bank, said retail banks were making so much money that they "may be tempted to throw money at employees in the belief that they are investing in the future". Instead they were increasing their risks. At the same time, employees

expected a higher proportion of and investment banks. It fol-profits to be paid ont in lows a furore over investment bonuses, leaving less retained profit for shareholders.

"The traditional link between profitability and employee remuneration is get-ting broken. Shareholders are getting less as employees are getting more, and that is a threat that shareholder banks need to recognise," he said. Mr Buxton issued his warning in a speech in Sydney to the International Monetary Conference, a gathering of 130

top executives from some of

the world's largest commercial

banking salaries in Loudon where several banks have tried to build up their businesses by hiring staff from their competi-

Particular attention has focused on Deutsche Morgan Grenfell, the investment banking subsidiary of Germany's Deutsche Bank, which has recruited heavily over the past year. Competitors complain that DMG's standard offer to attract important staff is to double the salary and bonus they received last year, and

guarantee the total for three London investment bankers. "I Mr Buxton said he could understand guaranteeing bonuses for the first year, a practice which had now secome prevalent, but was opposed to guarantees over two or three years. I believe the concept of offering medi-

um-term gnaranteed bonuses is quite wrong," he said. But Mr Hilmar Kopper, the chief executive of Deutsche Bank, and among those attending the Sydney conference. said he was not worried by the level of salaries paid to his

would start to worry when the returns wouldn't be there " he

Mr Aad Jacobs, the chairman of the executive board of RNG Group, the Dutch mattence and hanking conglomerate which last year took over the collapsed Barings investment bank, also remained unper-turbed at the level of salaries in his new affiliate, even though fund managers in the UK and US were often paid twice as much as their Dutch. counterparts while rimning smaller portfolios.

"If you want to work in Rome, do as the Romans do, he said, adding that "quite spectacular" growth rates made high salaries easier to gwellow.

But several other semior bankers said they shared Mr Buxton's concern that the industry might be building up a heavy cost base that would prove unsustainable if investment banking revenues declined. That decline was already under way, they said, as financial products increasingly became standardised

Lottery

operator

says it is

the greatest

THE NATIONAL most efficient lottery in the

world - at the same time as it

ran into a barrage of criticism over its profits. The consor-

25.217bm (\$7.91bn) in the year

to the end of March with

£1.416bn going to "good

causes", made a pretax profit of £77.5m and an after tax

profit of £51.1m, just under

The Camelot consortium

coneists of the Cadhary

Schweppes food group; De La

Rue, the security printers; the UK offshoot of US lottery com-

pany GTech; Racal Electron-

ics; end ICL, the computer

group. Camelot argues that

the after-tax figure is the crn-

cial number because it operates a highly regulated busi-ness with little opportunity to

The after-tax profit figure is

almost exactly in line with Camelot's first full half year

when the after-tax profit was

Mr Jack Cunningham, the

fim a week.

vary tax rates.

£23.6m.

Camelot, the

operator of the National Lot-

tery, yesterday claimed that it

had become the

largest and

By Raymond Snoddy and

The 'mad cow' crisis British government tactic brings EU ministers' meeting to a halt

# Foreign secretary cautious about early end to curbs

in Brussels, Luxembourg and London

Mr Malcolm Rifkind, UK foreign secretary, yesterday damped hopes of a deal to lift the worldwide ban on British beef products before the European summit in Florence on June 21.

Failure to reach agreement would prolong Britain's policy of non co-operation on EU business launched in an effort to secure early agreement on lifting the ban.

The European Commission is also dismayed that its efforts to broker a deal were being undermined by Britain's non co-operation policy, especially as the full 20-member Commission was expected to decide today to lift the ban on three British beef by-products.

Mr Franz Fischler, EU agriculture commissioner, warned that the timing of the lifting of the ban on derivatives was "up to Britain". It depended on how quickly UK tallow and gelatine plants met new safety requirements imposed by the

Ministry of Agriculture officials in London said last night Britain would move fast to implement any conditions

EU beef consumption

% change since March 20 when possible BSE-CJD fink admitted

UK Y

Prance Section 1

Netherlands 10

Spolif Atomo Sports

Scandinavia 1-00 12 12000

-30

-10

By Caroline Southey in Luxembourg and Judy Dempsey in Berlin

Decisions about the ban on British beef

ban will have to be dictated by science,

not politics. Mr Franz Fischler.

European commissioner for agriculture,

warned yesterday. Underlining the

prospect of a long haul in the beef negotiations, Mr Fischler said the Com-

mission could not "allow the impres-

sion to arise that agreements are politi-cal and that scientific evidence is

secondary".
Mr Fischier was speaking the day

after six farm ministers blocked a deci

sion in the council of ministers to lift

the ban on three British by-products

and as talks began between Britain, the

other member states and the Commis-

sion on the terms of a framework for

the step-by-step lifting of the ban. The terms of the framework agreement on

the ban would have to be "compatible

with state of the art scientific evi-

The speed at which the by-products

ban, which the Commission could agree to today, would be lifted was "up to

Britain," Mr Fischler said, adding that

-30/53

Ireland

Week commending

April 29 March 25

-73

a staged lifting of the ban. "We are not being bloody minded we are prepared to compromise to meet their concerns," one official said.

Mr John Major, the prime minister, told MPs in London yesterday he was looking for "early dates" for the beginning of a staged lifting of the beef export ban. But he repeatedly sidestepped questions from Mr Tony Blair, leader of the opposition Labour party, on whether Britain was demanding a specific timetable.

In its most concerted disrup tion campaign yet the UK yes-terday blocked 10 decisions including several they had actively supported - at a meeting of justice and home affairs ministers in Laxembourg. Mr Michael Howard, British home secretary, said the UK's campaign was to "concentrate the minds of the other govern-

ments of the European Union". Mr Rifkind, launching a diplomatic offensive in European capitals, said yesterday before meeting Mr Jacques Santer; European Commission president, that reaching a framework agreement before the Florence summit was a "desirable timetable, but not cru-

European Union farm

ministers yesterday attacked

as inadequate European Com-mission plans to pay aid to farmers for losses caused by

sharp falls in beef prices and

consumption following the

scare over "mad cow" disease. The latest figures show that

beef consumption in many EU

countries is still well below levels before the "mad cow"

By Caroline Southey in Luxembourg



British foreign secretary Malcohn Rifkind was gnardedly optimistic about the beef deadlock after he had met German chancellor Helmut Kohl at a Nato meeting in Berlin

sought by the UK for a step-bystep lifting of the embargo would have to be approved by the standing veterinary committee which two weeks ago voted against easing the ban on beef derivatives.

A Commission spokesman said talks yesterday between Mr Rifkind, Mr Dooglas Hogg, Mr Fischler said the terms of the British agriculture minisagreed with the EU to facilitate the framework agreement ter, Mr Santer and Mr Fischler 'decision.

Yet consumption has

in the first week of the crisis,

according to figures drawn up by the Irish Food Board, a gov-

ernment-funded body responsi-

ble for promoting Irish food

and drink. Germany is show-

ing a recovery from the 70 per cent fall recorded on March 29

to 30-50 per cent in the first

Science and not politics to dictate Brussels moves

week of May.

Beef exporters are furious because the

government is ordering them to repay

subsidies of up to £10m (\$15.4m) on

exports that have been rendered virtually unsaleable by the EU's worldwide export ban, Alison Maitland writes in

Individual exporting companies face

demands for repayment of refunds worth between £200,000 and £2m.

according to the International Meat Trade Association. Many will find their

bank guarantees being called in to

cover the costs, jeopardising prospects

it depended on how quickly licences

were issued for plants producing gela-tine and tallow and the information

passed to the Commission so that

inspection teams could be sent to the

Mr Fischler would not be drawn on

what the Commission would do if mem-ber states refused to allow British

imports of gelatine, tallow and semen,

saying he did not want to "express any

mistrust. All member states are bound by the terms. Unless there is proof to

for future exports.

improved since the sharp falls Mr Franz Fischler, commis-

In Britain consumption has Ecu21, while those who qualify

The association is already planning

legal action against the government

because exporters have been excluded

from the government's compensation

package for the meat industry. Many companies are facing severe cashflow

problems because they have unsold

stocks worth about £12m.
"I can't believe what's happening,"

ation's export committee, said last

night "It's almost as if the government

and Maff [the Ministry of Agriculture]

are intentionally trying to pull the rug from under our feet."

the contrary I must assume they will

keep faith," be said.
Ministers in Germany indicated yes-

terday that it would still be difficult to

persuade the states, or lander, to accept any imports of British beef or beef by

products. Given all the scientific rea-

sons, it was neither feasible nor respon-sible to lift the ban, Mr Horst Seehofer.

the German health minister, said. A

complete ban could last beyond Septem-

ber in Germany, he added But Mr Malcolm Rifkind, the British

Ms Jenny Burt, chairman of the ass

crisis broke in March when the recovered from a 40 per cent for the suckler cow premium intervention. So far 115,000 British government announced drop to 15 per cent and in the a possible link between BSE Netherlands it has bounced states would be allowed to allow market and into intervention.

had been "constructive". The two sides were "on a path towards a strategy for a stepby-step lifting of the ban.

The cautionary British tone followed the failure of farm ministers to agree on a European Commission proposal to ease the ban on gelatine; tal-low and bull semen, forcing the Commission to take the

and a fatal human brain condiback from 50 per cent to 10 per cate Eculion of the total pack-

EU farm ministers pressed

sioner for agriculture, to:

tugal and Luxembourg in par-

ticular argued for more money.

qualify for the special beef pre-

mium will receive an addi:

tional one-off payment of

Under the plan farmers who

British relief that the European Commission could lift the ban was tempered by knowledge that six countries - Germany, Austria, Portugal, the Netherlands, Belgium and Lux-embourg - remained opposed. In Luxembourg yesterday.

the justice and home affairs council machine was a faired. to a standstill as all its decisions require unanimity.

age to farmers they believe have not been fully compen-

Mr Fischler warned that the

"rull out all the stops" by buy-

ing meat into intervention if

further falls in prices were to

paying out Ecu230m for every

100,000 tonnes bought into

intervention. So far 115,000

tonnes have been taken off the

foreign secretary and Mr Douglas Hogg, the agriculture minister, will today try

to persuade their German counterparts

that British beef is safe. They will meet

Mr Klaus Kinkel, and Mr Jochen Borch-

ert, their German counterparts. Mr Rifkind yesterday met Mr Helmut

Kohl, the German chancellor in Berlin,

where both were attending the Nato

summif After the 45-minute meeting

with Mr Kohl, Mr Rifkind said there

was "increasing readiness to find a

solution to the problem.

German officials, however, said their

government's position had not changed. The interests of consumers came first, and Britain had to put forward a clear

timetable for slaughtering animals and

eradicating mad cow disease before even the slightest concession would be considered. There also had to be a con-

sensus in the scientific community.

lifting of the ban.

He said the Commission was

sated.

be avoided

improve the terms of an commission had "no additional Ecoesom (\$305m) aid package, resources", pointing out that Germany, France, Ireland, Portible commission would have to

# opposition Labour party's Beef consumption well below pre-BSE levels

shadow national heritage secretary, said yesterday: "People throughout the country are naturally concerned about the excessive profits made by Camelot. A Labour government would seek an efficient, non-profit-making promoter so more of lottery profits can go

directly to the good causes."

The national heritage committee of the House of Commons, while conceding that the National Lottery had been a great success, suggested that Camelot should give more of its profits to charity. Last year the company paid more than £550,000 to community and charitable projects and will consider the committee's

Camelot, however, issued independent research on the top 30 lotteries in the world. It showed that Camelot was the largest lottery in the world and returned more money to worthy causes and the government than any other lottery in terms of money and as a per-

centage of sales. Camelot insists that profit after tax will average less than 1p in the £1 through the seven-year licence period because the proportion retained by Cameot is squeezed as sales rise. Yesterday, senior Labour officials privately admitted there is little a Labour government could do to redistribute Camelot's profits until its licence

One idea being studied by the party is a tightening of the powers of the lottery regulator, allowing action if profits bare considered unreasonable. Lottery law allows the regulator to vary any condition in the licence even if the com-

Germany's health ministry - and the Länder, or states - have consistently pany does not consent. opposed any partial lifting of the ban in As a separate venture Came-"the interests of consumers," as Mr See hofer said yesterday. Next week, he will lot is considering taking part as an investor in other lotmeet the Lander in Berlin to discuss | teries around the world. how they should react to any partial

#### UK NEWS DIGEST

# \$150m defence order awarded

Smiths industries, the aerospace equipment manufacturer, said it had won an order worth up to £100m (\$154m) to install enhanced safety systems on UK military helicopters. The emanced safety systems on the manualy memory and right and group said it had beaten rival tenders from Britain's GEC and group sain it had beaten fivel tenders from primain's CREC and Shewart Hughes of the US to fit integrated "health and usage monitoring systems" (Rums) to 48 Chinook helicopters. The UK defence ministry, which invited bids for the safety equipment last summer, is considering ordering the equipment on up to 275 other helicopters including Sea King, Puma and

Plans to fit the equipment followed the crash in 1994 of an RAF Chinook in Scotland which killed four crewmen and 25 senior Northern Ireland security experts. The accident was blamed on pilot error rather than equipment failure. Although the initial contract is worth only about £20m, Smiths said it was confident of winning further orders from the UK ministry.
"US forces are considering installation of Hums capabilities on several thousand military helicopters including 1,100 Army Chinooks," the company said.

The system works by collating data from 200 sensors around the aircraft, which can be monitored by pilots for signs of stress or fatigue. That information can be used subsequently by maintenance crews for helicopter repair work and enhances the function of "black box" flight recorders in the event of a crash. Smiths has developed the system jointly with MJA Dynamics, the UK software specialist, GKN Westland Helicopters, Scientific Atlanta of the US and Aerosystems, the ground support equipment business. Shares in Smiths rose Ip to 698p ou the London stock market. Tim Burt, London

#### Executive lifestyles change

The stereotype of the thrusting young male executive, work ing all hours of the day and night while his female counterpart ing all hours of the day and night while his female counterpart dreams of going part-time, seems finally to have had its day. Young men are now more likely than young women to be interested in flexible working arrangements, while females are more anxious to be seen as enccessful than males, says a study of childless adults aged 20-94, published today

Being attractive to the opposite sex is twice as important for men in this age group as it is for women, according to Mintel, the market intelligence group. From a sample of 726 young people, the study finds that 17 per cent of women want to be described as "successful", compared with 14 per cent of men. Top attributes for both groups are loyalty and trustworthiness. From a sample of 239 pre-family adults, 78 per cent of men said they would prefer to be able to work flexibly compared with 69 per cent of women. Diane Summers, Marketing Correspondent

Rebel accountants defeated

Rebel members of the Institute of Chartered Accountants in England and Wales failed by a wide margin to persuade its annual meeting to back direct elections for the post of president. The motion was lost by 335 votes to 77. Dr Jeff Wooller, who proposed the reform, is a member of a ginger group for greater democracy. He said he would return to the issue next year. The institute has already set up an independent review of its constitution.

Jim Kelly, Accountancy Correspondent

#### Skill shortages alleged

Skill shortages are holding back expansion in the British engineering industry, said Mr Davey Hall, president of the AEEU engineering trade union. He added that some companies were finding "immense difficulty in attracting workers with the relevant skills" and wage levels were being pushed up as demand for skilled labour increased. But his observations appeared to conflict with the latest pay trend findings from the Engineering Employers Federation which showed a fall in the increase of the level of wage settlements in the three months to the end of April to 3.27 per cent.

By Robert Taylor, Employment Editor

#### Government secrecy claimed

Friends of the Earth, the environmental group, yesterday accused the government of using legally "dubious" excuses for witholding environmental data on water companies and other privatised enterprises. It urged the government to set up an independent body to consider appeals under a European Union directive on freedom of information. This requires environ-mental information held by public authorities, subject to some exceptions - such as commercially sensitive data - to be publicly available.

Friends of the Earth said it had been denied information about the estimated costs of water companies' programmes for cleaning up sewage and drinking water during the 1994 review by the industry regulator of the prices they could charge.

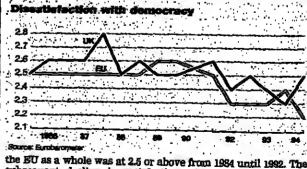
Leyla Boulton, Environment Correspondent

#### Democracy loses friends

Rising public dissatisfaction with government and the state of democracy is not a uniquely British trait. The trends are similar throughout the developed world, with sharp declines in public confidence across most European Union states over the past five years. The graph shows ratings of satisfaction with democracy compiled by Dr André Kaiser of Mannheim University in Germany, from the regular Europarometer sur-

veys of citizens' attitudes to institutions across the EU.

It reveals a sharp decline in public confidence in democracy across the EU between 1990 and 1994. The UK was broadly in line with the EU trend. A rating of more than 2.5 on the scale indicates a majority satisfied with the state of democracy. The UK was at 2.5 or above consistently from 1978 until 1992, while



subsequent decline in satisfaction with democracy is less sharp for Britain than for some other EU states - notably Germany, under the impact of unification. Public confidence in democracy has long been lower in France than in Britain.

Andrew Adonis. Public Policy Editor

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By Alan Cane in London Cambridge CH3 and address: C 3 Hill, Ernst & Young, Compass Home, 3rt Newmarket Road, Cambridge, CH3 SDZ.

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C.1 Hit

Mr Don Cruickshank, the telecommunications industry watchdog, believes in consultation. The results are apparent in Oftel's final proposals for controlling British Telecommunication's prices and trading behaviour.

Mr Cruickshank's exploratory propos-als had led BT and the rest of the industry to expect a pricing regime between 1997 and 2001 that would be little different from the existing tough controls - a cap on annual increases in charges on 60 per cent of BT's services equal to the rate of inflation minus 7% percentage points. But his final proposals cover

#### Telecoms watchdog changes direction only a quarter of BT's revenues, and the price cap has been reduced to inflation minus 41/2 points.

BT believed the harsher regime would have been extremely difficult to achieve. So did its competitors. They compete with the UK's dominant operator chiefly on price and were atraid that they would not be able to set prices giving them an adequate profit.

In fact, Mr Cruickshank's final proposals cover only a quarter of BT's revenues - low to medium spending residential customers where, in Mr Cruickshank's view, consumer protection is still required.

Oftel says its proposals will enable it

to take a big step eway from being a say that Mr Cruickshank has elected to detailed, prescriptive monopoly regula-tor and towards being a fair trading industry regulator."

Why the sudden change of direction and why did this "narrow basket" option emerge so late in the consulta-tive process? According to Mr Cruick shank the narrow basket was popular with consumer groups, which tended to make their submissions to the consultative process at the last minute. It was also the result of a more detailed analysis of the state of competition in UK telecoms. There will be those who will

set BT a comparatively easy pricing target to make it more amenable to acceptanthority. "Competition, rather than on the plans to take broader powers to outlaw anti-competitive behaviour among all licensed operators.

Mr Cruickshank has made clear that he sees the new pricing regime and the fair trading condition as indivisible. BT will have so much more freedom to set prices that controls are essential, BT has made clear that it will not accept the condition - with which it agrees without an appeals procedure. Under the 1984 Telecommunications Act, Mr Cruickshank cannot allow such a proce#attle defeated

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Colyn Gardner Cornhill. City of London, June 1996

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#### BUSINESS AND THE ENVIRONMENT

Solar power, for decades regarded as environmentally worthy bot uneconomic,

olar spotlight being seen as a increasingly viable energy option with vast commercial potential. In spite of bundreds of millions of dollars of investment during the past 20 years, the world market is still small. Only about 70MW of photovoltaic (PV) cells were produced last year for solar power – enough to power a small city such as Oxford in the UK.

Yet a combination of oew technology developments, rising demand in developing countries and measures by western governments to kick-start their own markets is genereting a brighter future and a poteotial multi-billion-pound market.

According to Strategies Unlimited, a California-based consultancy, the industry has the potential to grow to 1,600MW by the year 2010, under certain conditions. The forecast was released last month at a PV convention in Virginia, organised by the US Institute of Electrical and Electronic Engineers.

Growth like that would be a sbot in the arm for the PV industry. For several years, world production has shown steady year-oo-year growth of abont 15 per cent, but manufacturing capacity still exceeds demand. Globally, there is an Angela Bleasdale writes on solar energy's new dawn in the first part of a series on the sector

# Here comes the sun

estimated annual turnover of just £450m (\$680m), according to the Energy Technology Sup-port Unit at Harwell in the UK It is "little more than a cottage industry", says John Har-ford, manager of strategic plan-

ning at BP Solar International, a subsidiary of British Petroleum, the UK-based oil group.
PV enables light to be transformed directly into electric power - when light falls on to

Solar panels can be located in the facades or roofs of commercial or domestic buildings

the solar cells' thin film of treated semiconductor material (usually silicon), electrical charges are generated and conducted to an external grid. Much of today's demand comes from remote communities not linked to the national grid in industrialised and developing countries.

Philip Bouverat, commercial director at the Intersolar Group, a specialist solar electric company, says the markets in developing countries are large and growing, and there is a great need for low-cost solar devices to bring electrification to rural communities.

In Indonesia alone, an esti-mated 11m families are without electricity. Depending on the volumes, the cost of some solar devices could be as low as \$3 per watt, says Bouverat. He says that, as volumes iocrease and the price approaches \$1 per wait, solar will become competitive with conventional energy.

At present, solar energy costs about 50p per unit (kWhp) as an installed working system. That compares with approximately 7p per unit for conventional electricity (nuclear and fossil fuel) and

20p per unit for windgenerated power. In western countries, expan-

sion of tha market could lie in grid-connected applications, where PV-generated electricity can be fed back to the national grid. Harford identifies two such applications, the first being centralised PV stations, regarded as "the holy grail" by many in the industry.

But a more likely application in the shorter term would build on PV's main advantages - power generation at point of use, avoiding distribution and transmission costs, and the fact it can be integrated into most urban buildings.

It is this area, with its sub-stantial market potential, that has caught the imagination of the European PV industry. Solar panels can be located in the facades or roofs of commercial or domestic buildines to perate a portion of a building's electricity needs. Richard Page, the UK junior

Two views of the future for the world photovoltaics industry



energy minister, supported this view at a recent PV conference in London. He emphasised the UK's commitment to renewable energy, including solar. which was reflected in such government projects as the Technology Foresight programme and the Department of Trade and Industry's New and Renewable Energy programme.

Tha DTI helped finance the £1.5m conversion of a building in Newcastle upon Type into the UK's first solar-power offica block Page said It showed that office buildings will be able to generate onethird of their electricity needs from PV cladding". But Greenpeace, the environ-

mental lobbying group, says

two-thirds of the UK's present electricity production could be generated by PV if it were deployed wholesale in homes

and offices. Harford says the industry faces a "chicken and egg" prob-lem - PV-geoerated electricity is still more costly than that from fossil-fuel power stations. but, if manufacturers were guaranteed sustained demand, they would invest in high-volume production, reducing costs

The US Department of Energy has established a joint programme with the utilities to create what it sees as a necessary virtuous circle. It intends to double sales for solar prod-ucts in four years and more than double the number of utilities using PV. It spent about \$88m (£58m) on initiatives in 1995 and its cumulative expenditure is approaching \$880m.

For many years, Japan has promoted PV through its "sunshine" recewable energy programme to reduce the dependence on nuclear energy and on imported oil and gas. By 2000, it aims to stabilise carbon emissions at 1990 levels, a commitmeot also made by more than 150 developed nations, including the UK. Japan also says new energy sources will account for 2 per ceot of its energy requirements by 2000, 3 per cent by 2010.

That compares with the European Commissioo's "PV in 2010" study which calls for production of electricity from renewables to be trebled. It also concludes that roof and

building-facade grid-connected applications represent the fast. est-growing solar market in

Europe. Other market initiatives include rate-based incentives where individuals or bustnesses invest in PV, recouping their investment over 10 to 20 years via a premium rate for the electricity they feed into the national grid. The schemes are funded by a small sur-

charge on electricity bills. Harford says such schemes work best in countries with a high degree of local autonomy, such as Germany and Switzer land, where utility companies may be owned by local authorities and are more responsive to consumer preferences. He believes other mechanisms would be more appropriate for the UK.

Philip Wolfe, intersolar's managing director, says the time is right to include PV in the UK's Non-Fossil Fuel Obligation, which subsidises electricity produced from renewable sources. Inclusion would expand the market, be

says.
The DTI has so far excluded PV from the NFFO mechenism. "The costs of PV-generated electricity have precluded this," Page says. The position will be reviewed after the next NFFO order, to be made in

Howarer, John Battle. Labour's eoergy spokesman, says the party is committed to "prising open NFFO" and will include PV as part of its green

A Minished directive de sine mesmountemen

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PHILIPS

# Viewpoint · By Peter Knight

# The empty promise

#### The idea of product stewardship' is unlikely ever to work



You have finally painted that cupboard. What do you do with the nearly empty can of brilliant white

gloss? Put it in the bin or drive to the licensed disposal site for hazardous waste where it rightly belongs?

Chuck it in the bln. of course. Welcome to the wacky world

of "prodoct stewardship". where manufacturers promise to take full responsibility for their products from start to finish, but fall far short of their Such stewardship is one of

the central pillars of the chemical industry's Responsible Care programme, a voluntary initiative designed to improve the safety and environmental performance of the industry and, of course, its public image.

You will find plenty of promises about product stewardship in corporate policy statements on the environment. The idea is cropping up in other business areas too, most notably in the timber and paper industries (forest stewardship) and in fisheries (marine stewardship), where companies promise to take better care of that part of the environment that supports their particular business.

Product stewardship is a wonderful idea but it is unlikely ever to work. There are three big problems. First, the word "stewardship" oozes the sort of morality that business hates. Second. the idea only half-works in practice. Third, it is all based on empty promises A steward used to be the

#### Stewardship is a non-starter without policies that prime the markets

looked after his master's

housebold. He never owned a thing but had to make sure that everything ran smoothly. all accounts balanced and the estata was in tip-top shape to pass on to the beir. Greens tell us we must be

the stewards of the earth and look after it for future generations. This sounds fine coming from a pulpit and it might indeed be the "right thing to do". But, as a business word, "stewardship" stinks. It is dripping with morality. which makes it difficult to sell to managers trying to meet financial and production targets.

Maybe we don't need a new word at all, because product stewardship is all about the well-established idea of after-sales service and adding value. Business has saddled

itself with "stewardship" because it looked so good, so responsible, on the page after Love Canal, Bhopal, Seveso and other chemical disasters in

recent decades.
As for the theory and practice of product stewardship, the term implies that the manufacturer will. among other things, ensure that a product can be disposed of without damaging the environment,

Industry points to examples of successful product stewardship high up the supply chain: safer transport of hazardous chemicals; cleaner production methods; safer packaging and so on. But that

is the easy part.
The real difficulty lies nearer the end. If companies really practised product stewardship they would ensure that consumers could easily give back their spent products: the paint tin, the old toaster, the dud computer, the chipped acrylic counter top.

There are, of course. examples of recycling schemes that work - but not many and their impact is small. That is because it costs too much. You cannot expect the paint maker or the computer manufacturer to offer unilaterally a free collection and disposal service when the

market will not bear the cost. Product stewardship is a non-starter without policies that prime the markets to support the practice. When products reflect their full environmental costs including disposal - the stewardship of those products will be possible.

This is an area where government has to set policy in conjunction with the producers so that everyone is playing by the same rules. Until then, there is no point in busines swaggering about making al sorts of promises about cradle to grave stewardship when it knows that it will stumble in the cemetery.

The Responsible Care initiative was, in part, a defensive action to save the hazard-prone chemical industry from restrictive legislation. Responsibility. like stewardship, implies self-regulation. The notion stuck because it coincided with the fashioo for deregulation, market mechanisms and slim-line government. Responsible Care has certainly had a beneficial impact oo the big chemical companies, improving their performance

and their image. But because Responsible Care is toothless, it eocourages free riders - those companies that exploit the higher standards of the others.

If this form of discipline is going to work, the chemical industry - like all industries will have to develop ways to get rid of the bad stewards.

Companies will never be able to fulfil their stewardship responsibilities wheo there are no police - whether real people or fully-primed markets that demand accountability. Until then, product stewardship will be about empty promises.

Peter Knight is o specialist writer on business and the environment

ritain has not just two populist general entertainment television channels, BBC1 and ITV, but three. lhe third being Sky 1. Most viewers are not able to see Sky channels, of course, since they are available only in homes which pay for a satellite or cable service. That is one of the reasons wby so little in the way of criticism is written about the content of Sky, here or clsewbere (except in some Murdoch newspapers, Rupert Murdoch being the main shareholder in the Sky system). Given that most homes have no access to Sky, it is hardly surprising that, oationally, the Sky 1 viewing share is much smaller than those of BBC1 and ITV.

What does seem odd is that even in satellite and cable homes the old channels, according to the BARB figures, are still watched much more than Sky 1. During 1996 in such homes ITV's share has been about 28 per cent, BBC1's about 24 per cent and Sky 1's about 5 per cent. Even BBC2 and Channel 4 do better than Sky I with around 7 per cent each. Given that Sky 1 labours under none of the public service ohligations applying to its competitors - it shows no news, education or arts programmes, very little current affairs or religion (though it does carry The Hour Of Power at dawn on Sundays) and very few documentaries (The World At Wor is currently being repeated oo Sunday afternoons) - this ems curious.

No doubt the people at Sky will say that their programme budgets are much lower than those of the terrestrial channels, but that alone is not an explanation. We all know what sort of ratings can be achieved with cheap American imports and repeats: 25 Years Of The Two Ronnies is currently pulling in 8.5 million viewers to BBC1. E.R. and NYPD Blue regularly attract over 3m viewers to Channel 4 Sky 1, oo the other hand, has only one series in the entire week which manages to get above one million (The X-Files). Practically all its programmes fall below the half million mark. Why?

A few days dedicated to watching nothing but Sky 1 suggests a reason: to all intents and purposes this channel is not British but American. It looks American, sounds American, and perbaps most important, feels American. The chief factor is, of course, that so many of the programmes actually are American. Switch on at teatime this evening and you will see the time-travelling American drama series Quantum Leap, then the American cartoon The Simp sons, the British quiz Jeopardy, and then, between 7pm and the early bours of the morning nothing hut American shows: LAPD, M.A.S.H., Space: Above And Beyond, The Outer Limits, Quantum Leap (yes, again) Highlander, and The Late Show.

The pattern on other weekday evenings is practically identical. Indeed, Sky 1 differs radically from other British networks in that it "strips" programmes across the week: thus you can watch The Simpsons, the second highest rated series on the network. six nights a week at 6.00 pm, with a break on Saturday for a double dose

Tith the right art-

centrated pleasures, and this

week we bave already had two

of them. On Sunday, the Cana-

dian pianist Louis Lortle

played all of Chopin's studies in the Queen Elizabeth Hall -

the two famous books of 12

each, and the little Trois nou-

velles études too. On Monday it

was Hugo Wolf's turn, when

Christoph Pregardien and

Juliane Banse sang the whole

of his Itolienisches Liederbuch

to a full and rapturous house.

His technique is immaculate.

and the more extraordinary for

being utterly unshowy. Every

study in the first book, Op. 10,

sounded transparent and

effortless: he might have been

playing miuor Mozart or

Lortie delivered his Chopin

at the Wigmore Hall.

ists, one-com-poser recitals can offer special, con-



Reach for the ratings: the pulling power of repeats is demonstrated by "25 Years of the Two Ronnies", currently on BBC1

Television/Christopher Dunkley

# American diet on Sky

of Star Trek. On Sunday the dreary and often ludicrous American space opera turns up three times. Many of the other American series mentioned in the last paragraph also feature five nights a week. Perhaps this is another reason why, even in cable and satellite homes, Sky 1 takes such a small share. During four decades the British have grown used to a richer and more

It is not that individual American series are unpopular with British viewers. On the contrary, it has been noted before in this column that, from the days of Dragnet and I Love Lucy, British broadcasters have habitually used American series to help boost ratings - but only as a minor constituent in the schedule. On Sky 1 the Americanism simply goes on and on. Even in the rare moments when there is a factual programme such as LAPD, the police work under examination is American. These policemen fill their petrol tanks with "gas". They carry guns and get them out as a routine precaptionary measure whatever the incident in hand. Court TV, which is shown every weekday by Sky 1 at 3pm, is devoted exclusively to American courts.

he only general current affairs series on Sky 1 last week was 60 Minutes which is one of the best, and longest running, programmes of its sort in the world. However, the proposed legislation on "nart birth abortion" is American, as is the scandal over Prudential Bache and the selling of "partnerships". You do not have to be a xenophobe to find that, coming on top of a week of American cartoons, American police series, American comedies, and American science fiction, it is a hit wearing to be asked to get all indignant over the trials and tribulations of American life. British life as portrayed on television is quite worrying enough.

London recitals/David Murray

Chopin and Wolf par excellence

lively, affectionate account of Wolf's "Italian Songbook" at the Wigmore; but Prégardien

and Banse were no less stylish,

Many of the songs have to be

more or less acted, which they

did with less cunning - but

they had the bonus of native'

German. Heyse's German

"translations" are far more sophisticated than the original folk-Italian verses, and Wolf

revelled in the words. If Pré-

gardien's elegant tenor boasts

less variety of tone than Fin-

ley's clever baritone, he phrases cleanly and confi-

dently; and Banse's lovely, lim-

pid timbre disguises a very

sharp intelligence.

charming and funny.

shades of ruboto sentiment.
From there onward, he was

on superlative musicianly

form. Everything in the Op. 25

book sang, dazzled, bewitched

still with effortless fluency

but also with luminous feeling,

in exquisite chiaroscuro. Better

Chopin playing than this is

just not to be heard, not any-

where. At the end, the audi-

ence was literally baying for

encores. There being no

studies left. Lortie gave us a

nocturne and a waltz, both

magical, and then swept exu-

berantly through Debussy's

It was only last November

that Gerald Finley and Joan

Rogers gave a wonderfully

The very culture of Sky 1 is American. You sit through two minutes of action at the start of a drama episode then three minutes of credits, and find yourself dropped straight into a commercial break with no indication of where the programme ends and the commercials (or the channel trails which are mixed in with the commercials) begin. Advertising fills as much as 15 minntes in the hour and, fronically, turns out to be the most British aspect of the entire operation.

Within the programmes people are forever declaring "I spent moster my life behind the eight ball" (or it could be "ate ball") or "She's in a vurry frajile state", which is hardly surpris ing since these programmes are made in California. But it is, surely, a bit surprising that such efforts go into making the rest of the output - even the British elements - sound thoroughly American. Not only do the announcers frequently adopt American accents, they even use American

Every pair of singers in this Liederbuch re-orders the songs

in their nwn way, so as to

alternate between the male

and female voices, and also to

create some kind of dramatic

continuity. This time the re-or-

dering was quite unorthodox:

"Auch kleine Dinge", the natu-

ral prologue, began the second

half instead, and the finale was

not the riotous showpiece "Ich hab' in Penna" hut the slightly

overblown "Wenn dn. mein

Liebster, steigst zum Hhnmel

auf" - which Banse and their

piznist Michael Gees brought

off snperbly, silent-film-style

I fancy that the re-ordering owed a lot to Gees, who is

phraseology. "You're watching The X-Files on Sky One prime time", they drawl, meaning, presumably, that we are watching in peak viewing time. In an entire week of monitoring from The Mighty Morphin Power Rangers (not bad if you want fast action nonsense) to Civil Wars, the umpteenth American court series now running on British television - only one series cropped up which appeared to be British made, not shown previously elsewhere on British television, yet which could probably hold its own and attract a sizeable audience if shown elsewhere: Animal Practice, an everyday story of a major veterinary centre. With calves heing born by Caesarian section, an English setter dying under the knife, and a special padded room where horses can fall over under anaesthetic without burt-ing themselves, it looks like the British programme ideal. But it is the

exception which proves the rule: Sky 1 is an American network. something of a wild card. He is no mere accompanist, but a composer too (as one could have guessed from his searching, creative way with Wolf's glorious piano-parts), and a

jazz pianist, and a specialist in improvised music. Not many singers would put up with so aggressive a partner, but Prégardien and Banse did, to their credit - because Gees seemed to be re-creating Wolf's music from the inside. Every note counted, every moment tingled with life. (He was hrusque with endings, though: once the last note of a song was struck, he was up and away toward the next.) Hearing him was an experience in itself; and since it was comhined with such fresh, percep-tive singing, it raised the whole affair to an exciting pitch. The audieoce was as delighted as Lortie's had been.

International theatre on tour

# Laden with Euro-clichés

Russians still have troves of artistic wisdom yet to reveal to the west. On the other, there are whole tips of artistic inanity in which the Russians are only too eager to immerse themselves. In the 1980s, the Kirov Ballet used to waste everybody's time by setting its finest dancers to tackle the pretentious choreography of Maurice Béjart; the fact that Béjart has never been better danced just did not help.

During 1994, oo theatre productions fielded finer acting than those shown hy the Maly Drama Theatre of St Peters hurg on its British tour. But. elthough Cloustrophobio, receiving its first performances in Britain, is all about the dark side of Russian life in the modern era, and although it emerged from Mely director Lev Dodin's classes, it looks to e large extent like a very thorough plunge into western Eurotrash. That some of the performing is of a high order affords all too little compensation.

On the 1994 evidence, the Maly performers are at their best in character acting: above all in revealing both social surface and spiritual essence, as in Dodin's superletive threepart staging of Dostoyevsky's The Devils. Claustrophobio. however, is not particularly concerned with character, or spirit, at all. Sure, It attempts to expose the contrast of public and private lives, of fact and fantasy; and, from this basis, it addresses the vices of modern Russia: such as collective passivity and widespread alcoholism. But Claustrophobia, a ponnarrative two-hour collage of largely unconnected incidents, is too incoherent to be able to express effectively what it has in mind - or to express anyTo read the programme synopsis after the performance is to be astounded. They thought that communicated all of this?

Claustrophobio is laden with Euro-cliches, in particular, it is all too like many pieces made by Pina Bausch for her Dance Theatre of Wuppertal. For example: a large and imposing box set that is gradually wrecked during the course of the work: the surreal interleaving of realistic and hizarre effects; the non-narrative assortment of group activities and more small-scale vignettes: the ballet class for people who have no talent for ballet (and singing by people with no talent for soog); the episodes of bare-breasted self-exposure, of petty torture and petty masochism, and of naughtily lascivious desires, the bizarre or just plain wacko outhreaks of private or ensemble crazi ness , , , and more.

There are worse cliches: dancing to fragments of Piaf songs, group nonsense to Mozart's "Elvira Modigan" piano concerto and the crescendo of Rossini's Barbiere overture, a bogey figure in black mask and hody-tights. As in so much Euro-theatre, coarse references to the high culture of the past the most facile feature of post-moderoism - ahound, Goethe, Schiller, Pushkin, Gogol, Turgenev, Chekhov, Gorky, Dehussy, Rachmaninov, Scriahin, Picasso, Mandelstam. Nabokov: just names invoked from the wreckage. Nobody doubts that life in modern Russia must he culturally grim, and Claustrophobin confirms that. But it is not a work of art.

Alastair Macaulay

At the Lyric Theatre, Hammer-

#### Star-crossed lovers

ada Théatre's fantasy captured the imagination of Edinhurgh's audiences last summer, when it won a Pringe First. Revived for a sbort English tour, this French Romeo and Juliette are like refugees from a Pirandello play, star-crossed lovers trapped in their own story damped to the eternal re-enactment of their death, but never to die. This is the kind of European performance which is out of the source with theatrical energy.

In a dark mausoleum, reeking with smoke and shafts of Gothic light, Impassioned Romeo drinks the Apothecary's poison. Juliette, shrouded in her flowing rust-red bair, awakes on her tomb and stabs herself. After a dramatic pause, both nervously check to see if they have died at last. They have not. So they try to

die again. In an attempt to release themselves, they return to the core events of their life in their play: they try their first kiss again; they perform the ivy-clad halcooy scene. The neat theatrical conceit never lays these eternal lovers to rest. However many times they may seem to die in each performance of their story, they have, of course, endured for

400 years. A lot of the charm is in the clowning, which is in French the words; in the graceful body language. Coquettish Babette Masson and impish Jean-Louis Heckel also achieve a mock beroism. Sometimes, they crudely name-check the world's lovers - from Tristan and Isolde to Bonnie and Clyde. Then they are captivating; such as when, framed by medieval head-dresses, they perform an exquisite ritual between the sun and the moon.

Their cheeky, tragic eyes mances are robust, sweaty, erotic. Sometimes dainty, par-ticular, delicate. They play a full range of melodramatic emotion, of operatic grand passion, of balletic capriciousness - all touchstooes of the forms of theatrical artifice in which love flourishes.

lo the closing sequence, Romeo and Juliette walk off into the stars. Episodes of their lives float by in ethereal planeis of soap-sud bubbles. Then the lovers disappear into space, through upwardly falling stardust. This is a witty, dextrous piece of theatre from romantic comedy to l'amour propre.

#### Simon Reade

Warwick Arts Centre June 5-6 (01203 524524); Leicester Phoenix June 7 (01116 2554854); Oxford Pleyhouse June 9 (01865 798600).

# INTERNATIONAL **ARTS**

#### AMSTERDAM

EXHIBITION Van Gogh Museum Tel: 31-20-5705200 Van Gogh drawings, part I: each summer for the next four years the Van Gogh Museum will publish a volume of the catalogue of its collection of Van Gogh drawings. To mark each publication, a summer exhibition will be held. In the course of this tour-year period more than 500 sheets will be displayed. The first exhibition in the series is devoted to the period from 1680 to 1883; to Sep 15

#### BERLIN

CONCERT Komische Oper Tel: 49-30-202600 Orchester der Komischen Oper. with conductor Mario Venzago and Anarrator Peter Schweiger perform works by R. Schumann and Wagner; 8pm; Jun 6 DANCE

Staatsoper unter den Linden Tel: 49-30-2082861 Le Lac des Fées: a choreography

Taglioni, to music by Daniel François Esprit Auber, performed by the Ballett unter den Linden. Soloists include Scherzer, Lahiguera, Matz and Rozycki; 7pm; Jun 7, 8 (6pm)

#### EXHIBITION Art Institute of Chicago

Haydn. He sped lightly through the wicked A minor study – endless chromatic

scales, exclusively for the

third, fourth and fifth fingers

of the right hand - as if it were

By the interval, I was mut-

tering to myself that a bit of audible stress is sometimes an

advantage: in the churning F

minor study, for example, or

the "Revolutionary", which in

Lortie's hands had been per-

fectly modelled, objective and

rather cool. But he began his

second half with the relatively

easy Nouvelles Etudes; and sud-

denly, with no virtuoso chal-

lenges to meet, he was winkl-

ing out the most delicate

a beginner's bagatelle.

Tel: 1-312-4433600

D.H. Burnham and Mid-American Classicism: celebrating the 150th anniversary of Daniel H. Burnham's birth and his contributions in shaping Chicago's downtown district, the Art Institute presents this exhibition of approximately 100 drawings from the museum's permanent collections. Architect D.H. Burnham (1846-1912) was involved in the design of early Chicago skyscrapers such as the Rookery and several significant buildings in Chicago ranging from Marshall Field's and Orchestra Hall to the Rallway Exchange and the People's Gas Buildings; from Jun 7 to Seo 2

#### **■ COPENHAGEN**

EXHIBITION Ny Carisberg Glypothek Tel: 45-33 41 81 41 Byzantium. Late Antique and Byzantine Art in Scandinavian Collections: this exhibition brings together more than 100 objects from Uppsala, Stockholm, Oslo, Helsinki, Copenhagen and Odense; to Aug 31

#### **■ LONDON** ART & ANTIQUE FAIR Olympia Tel: 44-171-6033344

by Pierre Lacotte after Filippo The Summer Fine Art and Antiques Fair: in this international art and antiques fair, taking place in the Grand Hall, Olympia, over 400 dealers from the UK and overse are represented. The fair is divided into two sections: the Ground Floor has a general dateline of pre-1940, **■ CHICAGO** whereas the Gallery Level has specialist dealers offering works, the majority of which pre-date 1890;

L'Isle joueuse.

from Jun 6 to Jun 16 CONCERT Barbican Hall Tel: 44-171-8388891 London Symphony Orchestra: with conductor/pianist André Previn perform works by Matthews, Gershwin and Dvorák; 7.30pm; Jun

EXHIBITION Tate Gallery Tel: 44-171-8878000 Leon Kossoff: this exhibition includes about 80 paintings by this British artist and follows the development of his work from the 1950s to the present day; from Jun 6 to Sec 1

THEATRE **Barbican Theatre** Tel: 44-171-6388891 The Taming of the Shrew: by Shakespeare. Directed by Gale Edwards and performed by the Royal Shakespeare Company. The cast includes Josie Lawrence; 7.15pm; Jun 5, 6 (also 2pm)

#### LOS ANGELES EXHIBITION

Los Angeles County Museum of Art Tel: 1-213-857-6000 Talking Pictures: People Speak about the Photographs That Speak to Them: exhibition exploring the power of photography to document both personal history and world

history. The display includes 70 photographic works selected by participants from both inside and outsida the art world, which are accompanied by comments and reactions: to Jun 9

#### **■ MAASTRICHT**

ART & ANTIQUE FAIR MECC Tel: 31-43-3838383 European Designer: the first edition of this European forum for designers and users of design. More than 400 designers from 15 European countries have joined together as exhibitors. representing design services such as product design, graphic/ multimedia/communication design, interior design, public design, exhibition design, packaging and brand design, design management and design consulting; from Jun 8 to Jun 9

#### MUNICH **OPERA**

Nationaltheate Tel: 49-89-21851920 Serse: by Handel. Conducted by Noel Davies and performed by the Bayerischa Staatsoper, Soloists include Ann Murray, Kathleen Kuhlmann, Frances Lucey and Christopher Robson; 7pm; Jun 6, 8

#### NEW YORK

CONCERT Alice Tully Hall Tel: 1-212-875-5050 Universe Symphony: world premiere of this work by Charles Ives, realized by Johnny Reinhard. ives began to compose it in 1915, and ultimately left an algorithmic

series of sketches, as well as e request for someone to finish the work. In realizing lives' symphony, Reinhard has added no additional music. The work is performed by the AFMM Orchestra, conducted by Johnny Reinhard; 8pm; Jun 6 EXHIBITION MOMA - Museum of Modern Art,

New York Tel: 1-212-708-9400 From Bauhaus To Pop: Masterworks Given By Philip Johnson: exhibition on the occasion of the ninetieth birthday of architect Philip Johnson, honouring seven decades of contributions by one of the MOMA's most dedicated supporters. The show features paintings, sculptures and drawings, as well as posters, design objects, and architectural models and drawings. In confunction with the exhibition, Johnson has organized a special installation of works in The Abby Aldrich Rockefeller Sculpture Garden, the space he designed in 1953; from Jun 8 to Sep 3

#### ■ PARIS

CONCERT Salle Gaveau Tel: 33-1 49 53 05 07 Debussy Quartet: with mezzo-soprano Hanna Schaer and pianist Husyin Sermet perform works by Ohana, Dancla, Fauré, Schmitt and Caplet; 8.30pm; Jun 8 EXHIBITION Galerie Nationale du Jeu de

Paume Tel: 33-1 47 03 12 50 Un siècle de sculpture anglaise: exhibition focusing on 20th-century British sculpture. The display includes works by Henry Moore, Barbara Hepworth, Tony Cragg, Richard Deacon, Jacob Epstein, Gilbert & George, Richard Long and OPERA

Bill Woodrow; from Jun 6 to Sep 15 Théâtre des Champs-Elysées

Tel: 33-1 49 52 50 50 La Clemenza di Tito: by Mozart. Conducted by Louis Langrée and performed by the Orchestre de Picardie. Soloists include Adrian Thompson, Elzbieta Szmytka and Sandrine Piau; 7.30pm; Jun 6, 8

#### **■ STOCKHOLM**

POP-MUSIC Stockholm Globe Arena Tel: 46-8-7251000 Tina Turner: performance by the American singer; 7.30pm; Jun 6, 7,

#### **■ STUTTGART OPERA**

Staatstheater Stuttgart Tel: 49-711-20320 Macbeth: by Verdi. Conducted by Gabriele Ferro and performed by the Oper Stuttgart. Soloists include Rouillon, Stadiar and Zschau;

#### VIENNA

7.30pm; Jun 6, 9

CONCERT Musikverein Tel: 43-1-5058681 Wiener Philharmoniker: with conductor Lorin Maazel perform works by Schubert and Bruckner, 11am; Jun 6

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EUROPEAN CABLE AND SATELLITE BUSINESS TV (Central European Time)

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business and the financial

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Squawk Box

10.00

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Financial Times Business Tonight



**Edward Mortimer** 

# The awkward squad

As the election of Netanyahu shows, electors have a nasty habit of voting for people who upset the international establishment

to avoid talking to Mr Yassir Arafat, the PLO leader, at all.

He may well refuse even to an

"The trouble with free elections," according to the late Nikita Khrushchev, "is that you never know who will

He was right. Free elections have become more fashionable since his time, and this year electorates show a disturbing tendency not to vote as foreigners think they should. Since last December Turkey

and India have produced bung parliaments with no coherent majority in which the largest party represents a form of religious nationalism regarded as unacceptable by the political establishment at home and abroad. Spain and the Czech Republic also elected hung parliaments. They are less problematic but will mean less decisive and predictable governments than the mar-kets would like.

Albanian voters may have wanted to upget the world by voting against President Sali Berisha, a key figure in western attempts to stabilise the Balkans. We cannot know for sure because Mr Berisha, evidently a believer in the Khrushchev doctrina, took such precautions against their doing so that he himself has become an international

Only the Italians have behaved well, for them. No one expects them to elect a one-party government with an overall majority, but they did for once make a clear choice between two rival coalitions, and in voting for the alliance dominated by the former communists they chose the one that Italy's allies and partners are most comfortable with. How times have changed

More tiresoma was last week's performance by voters in Northern Ireland. Invited to choose delegates for all-party talks on their province's constitutional future, they responded by giving a boost to one party - Sinn Féin - which will almost certainly be disqualified from taking part in the talks by the absence of an IRA ceasefire, and to another - the Democratic Unionist

it will not talk to Sinn Féin even if there is a ceasefire. While that was going on, Israeli officials were counting and recounting the votes in their country's first direct election of a prime minister. By Friday there was no get-ting away from it. Mr Benja-min Netanyahu had won.

This is the biggest upset yet.
If there is one piety to which the international establishment unanimously subscribes, it is the importance of the Middle East peace process and the indispensable role in that process played by the late Ylt-zhak Rabin and his successor Mr Shimon Peres. "Bibi" Netanyahu is ver-

bally committed to respecting the results so far, but he and his party have denounced each stage of the process, and have made it very clear they intend to make no more concessions. They will not contermilate withdrawal from the Golan Heights - which meens there is no prospect of peace with Syria, and therefore a virtual certainty of continuing

They will restume intensive Jewish settlement in the West Bank. They will not even talk about the future of Jerusalem, or about allowing the present Palestinian Authority to develop into a state. Indeed

ahead with the agreed withdrawal of troops from Hebron next week: at the very least it is likely to be delayed if he has not formed his government by then. All this makes it certain there will be more violence by Palestinians against Israelis – there were already clashes in Hebron on Monday. Mr Netanyahn is pledged to escalate this by sending troops back into the areas under Mr Arafat's con-trol if Mr Arafat does not deal with it to his satisfaction. Mr Netanyahn's victory is a size in the face for the international establishment, and for the Clinton administration

in particular. US officials privately answered criticism of the appalling one-sided US attitude during the recent fighting in Lebanon by saying that their one overriding priority was to help Mr Peres win the election. In other words they staked everything on a horse which turned out to be

When something like this happens, the establishment swings into damage-limitation mode. People fall over themselves to discover statesmanlike qualities in politicisms



Yeltsin (left) and Berisha cast their votes

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breakfast). For further details eall 0171-629 8860 or fax 0171-499 2210. For details of

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Mr Netanyahu will do his best as beyond the pale. I have not checked, but I feel sure that in January 1988 there were editorials arguing that, confronted with the realities and responsibilities of power, Herr Hitler would have to distance himself from his more intransigent supporters and more irresponsible campaign rheto-ric; that he was bound to take account of the realities of Germany's international situation; that the Brining govern ment had been far from ideal, and Germany would benefit from a new generation and a new style of government; and, when all else failed, that "at least with these people we know where we stand".

A grotesque analogy, o course. Mr Netsnyahu is not Hitler, but the elected leader of the survivors of Hitler's victims. There is no reason to think he will embark on the mass extermination of Arabs or Palestinians, or even on a programme of deliberate terri torial expansion. But his concept of Israeli security will require him to hold on to the Palestinian, Syrian and Lebanese territory Israel already occupies. It could lead him to undertake a new ground offen sive in Lehanon, possibly leading to a direct clash with Syria. Many Arabs, and proba-bly not a few Israelis, will meet their deaths as a

His election has already been welcomed by Mr New Gingrich, speaker of the Republican-controlled US congress; and a Democratic president seeking re-election is most unlikely to risk a serious confrontation with Israel. Until November, at least, and probably beyond, Bibl and his colleagues will have a free hand. It would be surprising indeed if there are no Arab provocations for them to

respond to.

Meanwhile, we can all get into practice at looking on the bright side. We shall need that, if the fashion for upsetting the international establishment is followed by Russian voters next Sunday week.



#### Software skills can match chip development

From Mr Morium Thomas. Sir, Your leader, "Chips galore" (May 29) correctly forecasts that computer processors will continue to double in power and halve in price every two years for the foreseeable future (Moore's Law). You are on less firm ground with your comments

on software. A microprocessor with more than 100m computing elements will be a great challenge to design correctly, but it should be little or no harder to program. Most software is written in high-level languages, using a special program (known as a compiler) to generate the machine code for each processor chip. Compiler technology has been

provide a continuous. prove that the software meets its specifications, using

decades.
You say that tangress in software is slow shift shows little signs of an elegating, but this is not my experience of the

past 30 years.
The UK software inclusivy
can now write software more
cheaply and mere quickly than
ever before, and provide
solutions to besiness problems
that would have been impossibly large or complex in previous decades. We can develop systems that are highly reliable, and which error-free service. Where the application demands the highest assurance we can

mathematical techniques and special software tools. Unfortunately, too many software projects still fail.
Often, this happens because software development is seen as a low-skill craft, rather than one of the hardest (because most abstract) engineering continue to hire contract programmers to develop their systems, instead of calling in consultant engineers to

these expensive failures will continue. Companies have long recognised the important role of architects and consultant engineers in construction projects. With computer systems destined to become

manage the whole project.

even more pervasive and fundamental to society, it is time that software development and systems integration became recognised as an engineering profession, and that purchasers started questioning the qualifications and engineering credentials of their suppliers.

Then we shall be able to realise the benefits of Texas Instruments' breakthrough for wealth creation and improved quality of life.

Martyn Thomas, managing director, Praxis, Deloitte and Touche Consulting Group, 20 Manyers Street. Rath BA1 1PX, UK

#### The politics of welfare 'benefit'

From Mr Eugene Hammons. Sir, When will Patti Waldmeir and her like realise their mistaks when assuming the welfare system in the US "benefits" anyone, especially blacks and Hispanics. ("A handshake away from the presidency", June 1/2). Crime, domestic violence, illegitimacy and hopelessness have all grown disproportionate to the growth of the general population as more and more federally sponsored welfare spending has stimulated their

very existence.

Bob Dole understands this, and he apparently had something to say about the causes and remedies of domestic violence. And where else should he deliver such a message but where the problem exists? It would be considered less than coursecus for him to have addressed the subject of domestic violence in the elite Chicago Club than where the violence actually takes place. Unfortunately, we will never have the privilege of knowing the content of his speech because Waldmeir and others who report on such happenings are more bent on talking about

his seeming lack of "feeling the neighbourhood's pain" than the substance of his ideas. The truth is Bob Dole knows pain in a way that President Bill Clinton cannot even begin to imagine. No. Mr Dole cannot produce tears on demand as fairly defines the campaign, substance versus falseness and

Eugene Hammons, 11299 Palestine Road, Brenhant, Texas 77833,

#### Mandatory sentencing is correct response to crime

From Mr P.J.R Preston. Sir, Mark Suzman's article "The rights and wrongs of locking up more criminals" (June 1) is extremely biased towards the establishment viewpoint. For the most part their views have been moulded by an upbringing in a different, more affinent, milieu, resulting in their very limited appreciation of the reasoning .

of the majority of people. It is the duty of parliament to enforce the majority will and if this is what Michael Howard, the home secretary, is doing then, no matter what his ulterior motives, he is undoubtedly doing the right

The cost of crime detection, prosecution and punishment bears hardest on the ordinary worker, who can least afford to install protective devices and have adequate insurance cover. Their actual standard of living is affected by crime.

more so than that of the From Mr K.R. Tidmarsh.

But when he refers to the frequent attribution of blame social incomplities be fails to point up a factor which is often it is not a question of which techniques were used for such enrichment or who were the

massive creaming off of Soviet

establishment, Church, prison reformers and other so-called

do-gooders.

Most criminals come from the working class. Their peers know that, with very few exceptions, it is their own choice to commit criminal acts. Subconsciously or otherwise, the weigh up the risk of being caught, against probable gain, and act accordingly.

At the appearant whim of the judge, the criminal may receive a totally inadequate sentence. Of course the ordinary person is incensed with the inability of those responsible adequately to punish the crime. If, as stated, the certainty of punishment is a strong deterrent, then since crime is the free choice o the criminal - let us have mandatory sentencing of a strongly deterrent nature.

P.J.R Preston. 805-3170 Gladwin Road, Abbotsford, BC, Canada

# Land is ours

From Ms Lizabeth Herzog. Sir. I am somewhat confused by the FT's repeated use of the adjective "Arab" every time it employs the word "land(s)" when describing territory lived in by Jews in Israel. When writers refer to California, do they call it Mexican land, or, for that matter, is America ever referred to as Indian land? How about the Falkland slands being called Argentine land, not to mention the Irish land of Northern Ireland? Jews in Jerusalem are celebrating 3,000 years of Jewish presence in this land. After repeated invasions by Persians, Greeks, Romans, Arabs, Turks and British, the majority of us have returned to reclaim that which was ours under the Davidic dynasty. The Arab occupation of our land was just another blip in

Lizabeth Herzog. 7 Diskin, Jerusalem 96440, Israel

#### Fortunes made by Russia's former communists entire process was devised and

Sir, Anders Aslund (Europa column, May 31) has quite correctly outlined the principal methods by which some Russians have made fortunes, since the break-up of the :

Soviet Union. to "reformers" for the resulting particular reforming politicians responsible for the

The point surely is that the

operated by the former communist party priviligentsia. It is now largely the same communist apparatchiks who have sumply changed their caps to become the new capitalists. Those who ratchiks who have simply used to be powerful by virtue of their influence in the party have now acquired even greater power - and certainly security - through their

According to a recent study by the Institute of Sociology of the Russian Academy of Sciences, the overwhelmin majority of the new Russian elite are former members of the communist party "nomenklatura". Right across

Russian society the bulk of the financial and political elite are former apparatchiks - 75 per cent of the presidential entourage, 74.3 per cent of top civil servants and 61 per cent of the leading business people. The newspaper "Izvestia" has just published a revealing report on the city of Briansk where all the commanding heights of local industry were taken into their own hands by - through a systematic "privatisation" operated by the regional governor, himself

K.R. Tidmarsh. Villa Malore Tout, 1295 Mies, Switzerland

Personal View • Niall FitzGerald

# A European nightmare

Since membership of the EU is vital for UK business. withdrawal is not a serious option

Nothing keeps me awake at night. And only rarely do I mares. But I dreamt the other night that there was serious talk in this country about the UK leaving the European Union, that seemingly sensible people were actually claiming the UK would be better off ontside, and that the British government had announced a policy

of non-co-operation on single market legislation. The real nightmare started. when I woke up, and found it was true. As a businessman I cannot believe that people are actually thinking the unthinkable. It is fundamental to the economic success of the UK that it remains not just part of, but at the heart of, Europe.

That is why present government policy over the ban on British beef concerns me. I am not, of course, privy to the details of the precise negotiating dynamics, and therefore cannot give an informed opin-ion on the likely affectiveness of their approach.

But judged from outside, this policy is not helpful to British business interests in Europe, and - if sustained - will be harmful. I can, therefore, only hope that the policy of non-cooperation will be brought to a halt, especially now that the ban on UK exports of beef derivatives seems about to be.

succour to those siren voices port.

to the rocks of withdrawal. It angers me when politicians in particular indulge themselves in such talk without taking any responsibility for the horrific economic consequences of such a step. They do not know

what they are talking about.

Much of Britain's prosperity
derives from its industry and business being inherently part of Europe. The UK is part of one of the world's three great trading blocs, a single market of 370m consumers responsible for 40 per cent of world trade. To think it could prosper outside the EU is to ignore the

It is, for example, naive to claim that Brussels would be unable to impose tariffs on goods and services imported rom a newly-departed Britain because of the World Trade Organisation. It is not just about tariffs. The EU would naturally draw up rules of trade to suit its needs - not those of outsiders.

And it is nonsense to suggest that multinationals have been investing in the UK simply because of language and improved labour relations. The train is they have been coming to Britain because it is a competitive entry point for Europe. It was crucial for them to invest, and Britain was simply the best place to be for access to the RU.

At the heart of all of this is the single market. It is true that it is by no means perfect or complete. There is a need to improve the implementation and enforcement of legislation evenly across Europe. There is much to be done in removing state aids and liberalising markets still not open to free competition, such as telecom-Such an approach also gives munications, energy and transBut the single market has probably been the most important boost to European competitiveness over the past 10 years. It has given companies the ability to operate on equal terms in an open business environment, and to pass on that benefit to the consumer.

Take my own company, Uni-lever. About half our annual turnover of £32bn (\$50bn) is in Europe. Over the past five years, the prices of many of our products have actually fallen because of the cost reduction coming from the more effective and harmonised organisation of our operations across the EU. Europe also gives us the solid base we need from which to trade globally, producing resources for us to

invest elsewhere in the world. The single market is a great stimulus to productivity and the UK throws it away at its peril. That really is the heart of the argument. The British must not allow it to be deflected by wrangling over issues like Emn and a single currency. The completion of the single market does not depend on a single currency,

It is irresponsible to claim there is a serious case for UK withdrawal from the EU and then choose to ignore the reality of the economic

consequences

and that debate should be kept

debate itself leaves me close to despair. It is irresponsible and self-indulgent to claim there is a serious case for withdrawal and then to choose to ignore tha economic consequences. The violent and irrational way in which this view is expressed is damaging the UK's prosperity and its position in Europe. Some politicians and media commentators seem to show little respect for the common sense or the well-being of their

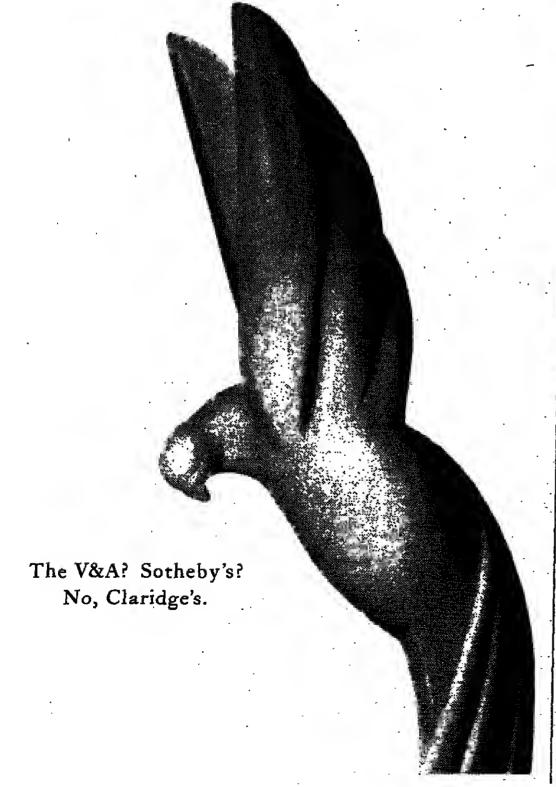
fellow citizens. It is, therefore, time for the business community to stand up and be counted. The Con-federation of British Industry is leading the way, with a concerted Business in Europe cam-paign designed to put business priorities at the top of the European agenda and promote a sensible, rational debate on the vital issues.

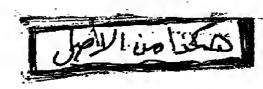
The campaign comes to a head today in London at the start of a week of events across the country which will give the business voice on Europe the platform it deserves.

The 1975 Euro-referendum only really started to swing towards entry when business engaged in the debate. Our arguments had more substance than those of the politicians. It is again necessary for us to spell out the harsh realities of life and forgo misty-eyed

Withdrawal from the EU is not an option. That message must be shouted from the rooftops. The pragmatic voice of business must be heard.

The author is the chairmandesignate of Unilever and chairman of the Confederation of British Industry's Europe





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#### FINANCIAL TIMES

Number One Southwark Bridge, London SEI 9HL Tel: +44 171-873 3000 Telex: 922186 Fax: +44 171-407 5700 Wednesday June 5 1996

# Blessed are the weak

Every dog has his day - and so, it vinced the weak currencies have appears, does every currency. For some time now, the currencies that have been having their day are indeed the dogs - the US dol-lar, the Italian lira, the pound sterling, the Spanish peseta, and all the weaker European currencies. Meanwhile, pedigree canines, such as the Japanese yen and the German D-Mark, have been rather feeble. Why has this happened? Can it last? And should the owners be

Back in April 1995, finance ministers and central bank governors of the Group of Seven leading industrial countries decided the dollar bad become too weak. Whether by luck or judgment, their wishes were the markats' command. By yesterday, the dollar had risen to Y109 and DM1.53, revaluations from its trough of 35

and 13 per cent, respectively.

When the dollar strengthens, other traditionally weak currencies plack np courage as well. The Italian lira, for example, plummeted from 750 to the D-Mark in the summer of 1992 to over 1,250 m April 1995 - a devaluation of 40 per cent. It has since recovered to 1,008. Similarly, the pound fell from DM2.80 in the summer of 1992 to DM2.18 in May and November 1995 - a devaluation of 22 per cent. Yesterday, it was back to DM2.37. The revaluations of the lira and the pound from their low points against the D-Mark are 25 and 9 per cent, respectively, almost too much of a good thing.

#### Collapsed differential

The revaluation of weak currencies has been quite general. Every ERM member currency is within its old narrow band against the D-Mark. The French yield differential vis à vis German 10-year bunds has disappeared. The Italian differential has collapsed from a peak of 6% percentage points last year to only a little over 3 percentage points. The differential on British gilts is an exception to this general trend, however. It has tended to rise and is now 114 percentage points.

The most obvious explanation for this marked turnround in the fortunes of the historically weak currencies is that markets cannot walk and chew gum at the same reached a temporary bottom, they seek yield. They continue to do so until the combination of declining yield and appreciating currencies makes them more aware of the currency risk, whereupon they switch their focus again.

There is more to it however Because the weakness of the German and Japanese economies is now seen to be deep-seated, lengthy periods of relatively loose monetary policy are required. Still more fundamentally, in a world of low inflation, revaluations no longer bring disinflation and swift returns to external competitive ness. They deliver, instead, the threats of deflation and long periods of uncompetitiveness.

Political judgment

Within Europe, there is another force at work - the credibility of economic and monetary union. This is a political judgment by the markets, not an economic one, since so far only Luxembourg, Ireland and Denmark qualify -none central players and the latter two only by finessing the public debt criteria. Yet that political judgment may well be correct.

Can the turnround last? No. because it never does. What might create a change in perspective? A strong recovery in Germany and Japan, leading to expectations of higher short-term interest rates, renewed growth of Japanese exports to the US, or worries about whether the entry criteria for Emu will be fudged after all.

On balance, people should be moderately pleased by what has happened, since the present concatenation of interest rates and exchange rates should lead to more balanced growth within both the world and European economies. The French and Germans should also realise that their phobia about the perpetual currency weakness of the likely Emp outsiders has been greatly exagger-

The Italians can now see a good economic reason for putting the lira back in the ERM, namely to keep it down. And Mr Clarke will find it easier to justify lower interest rates. An era when owners of pedigree currencies want them to be feeble brings many advantages. time. When investors are con- Enjoy them while they last.

# Airport profits fly too high

has a high international reputation and invests heavily on improvements, but the public pays a price. Because of the peculiar way in which it is regulated, the company makes more money than a monopoly ought to make. And it is hard to determine how far profits could be driven down without curbing its desire to invest.

This is one question which the Monoplies and Mergers Commission must answer in its five-year review of BAA, due to be com-pleted next week. Tight price controls are desirable, but more radical ideas for curbing monopoly profits are now needed, particularly by introducing competition.

The MMC will suggest what caps should be placed on BAA's charges to airlines for the next five years. The Civil Aviation Authority, which is not bound by the MMC's viewa, will then pub-

lish its own recommendations. The 1991 review drew attention to the anxieties of airlines and passengers that the present framework of charges gives BAA insufficient incentive to invest in terminal facilities. It can boost profits by squeezing ever higher volumes of traffic through its existing facilities. Moreover, the problem of determining the cost of capital, common to all utility regulation, is particularly bard in the case of airports as there is no competitor with which to make comparisons.

The result of these shortcomings of regulation is that BAA's profits over the past five years have been higher than expected. They are also high compared to the profits of many airlines.

#### Licensed monopolies

Regulation can continue to lighten the caps on traffic charges. However this revenue now represents only about a third of BAA's total turnover. The best way to improve incentives for efficient investment would be to increase competition.

This will not be easy. The first Obstacle is that unlike other laws Which govern licensed monopolies, the 1986 Airports Act does not say that that the CAA must encourage competition. So in this review, the MMC could not recommend that the BAA should be brocompany was operating against the public interest - a rather severe test. The Government might need to refer this issue specifically to the commission.

Nevertheless, the options need to be explored. One possibility would be to break up BAA into separate companies for each airport. Unfortunately, passengers show such an overwhelming pref-erence for Heathrow that landing charges there would have to be raised substantially for competition to be effective. And since capacity is limited at Heathrow Gatwick would be a profitable monopoly with little incentive to compete by improving levels of

Competitive tenders

An alternative would be to beef up competition within an airport. BAA aiready holds competitive tenders for many services such as airport shops, but it keeps the monopoly rents. This is not a very satisfactory system, since these profits are only regulated indirectly. When the price cap for landing charges is fixed, all other expected revenues are taken into consideration. Under this "single till" system, revenues from duty free shops effectively subsidise landing charges. Since this is the system adopted by other international airports, it might be diffi-cult to unscramble. Nevertheless, it should be looked at

A more hopeful possibility would be to hold a competitive tender for the building of the projected Terminal 5 at Heathrow, assuming planning permission can be obtained. The successful bidder would become an independent operating company within the airport. It would need some protection from the regulator, for example, to ensure that runway charges were not stacked against it. Such regulatory problems can be solved, as has been shown in other industries, notably gas and

telecommunications. If this were done, the public would have a much clearer idea of the demand for a new terminal and of what it should cost. And there would be no need to allow BAA to collect huge piles of cash ready to bury under tarmac.

# A hidden hand of corruption

**Peter Norman** on Germany's plans to raise the penalties for corrupt business practices, one of the country's few fast-growing activities

assured for Mr Hans Jakob Zimmermann, a ieading executive with Thyssen, the German steel and engineering conglomerate. But late last year he was forced to resign for using his company's ser-vices and those of a leading supplier, Hochtief, to rebuild his Essen

home at bargain basement prices.
Several hundred kilometres to the south in the atate of Baden-Württemberg, the rector of Offenburg technical university has been suspended from office and is appealing against being found guilty of awarding a degree to a student in return for his restoring the professor's classic car.

Welcome to Germany, a country that has traditionally prided itself on being clean but where corruption is now one of the few fastgrowing economic activities. News of financial irregularities have come almost a daily event - as shown by recent heavy losses at Klockner-Humboldt-Deutz, the engineering group, and Bremer Vulkan, the shipbuilding company that declared bankruptcy in April. But the growth in cases of outright cor-ruption has worried Chancellor Helmnt Kohl's government to the extent that it is proposing a steep increase in the penalties for those

"Wa have pretty clear indications that corruption is growing compared with a few years ago when it was almost a foreign word in Germany," says Mr Rupert Scholz, deputy leader of Mr Kohl's Christian Democratic Union in the Bundestag.
"We want to address this problem
and will bring a package of measures before parliament, probably in the coming weeks."

At first sight, Germany seems to have little to worry about. Last weekend, the 1996 corruption perceptions index, produced by Transparency International, a Berlinbased pressure group dedicated to fighting worldwide corruption, ranked Germany as the 13th most virtuous country ont of 54. The index, which reflects the perception of international business executives about corruption in particular countries, put New Zealand at the top as the cleanest country and Nigeria at

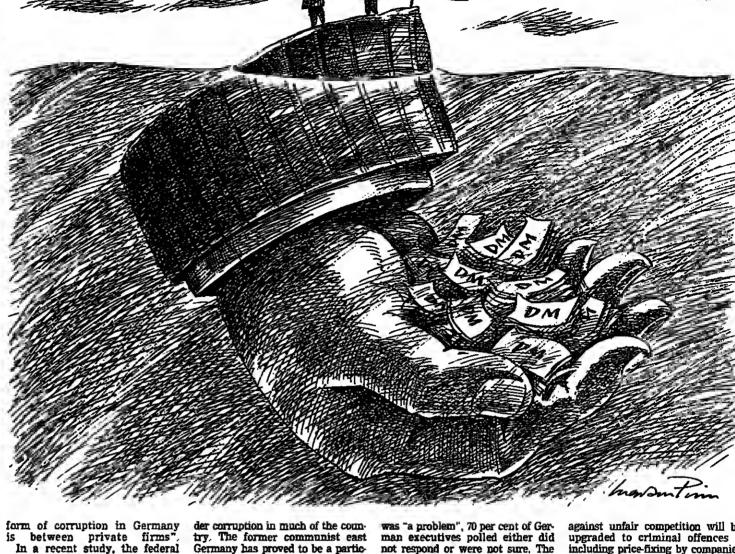
The federal criminal office in Wiesbaden recently reported that cases of bribery and corruption involving officials fell to 2.875 last year from 3.253 in 1994. The clear up rate in 1995 was 96 per cent.

But the official statistics take no account of corruption that remains undetected in many cases, there is no obvious victim to file a complaint - so those that come to light are the exception rather than the rule, emerging by chance or because the participants fall ont and betray each other.

The Transparency international league table also tells only part of the story. The organisation defines corruption as "the misuse of public power for private benefits" through activities such as bribing officials, kickbacks on the awarding of public contracts and embezziement.

The index therefore scores the behaviour of public officials and politicians who are mainly on the receiving end of bribes. It takes no account of the role of exporting companies in big trading nations such as Germany which contribute significantly to growth of corruption in developing countries.

And the index excludes corruption in relations between companies such as that which ended Mr Zimmermann'a career. Yet, according to Mr Fredrik Galtung of Transparency international, "the common



between private firms" In a recent study, the federal criminal office admitted that "knowledge about corruption is extremely limited in Germany compared with other states". This is hardly surprising because public prosecutors began to take the problem seriously in the late 1980s. It was only in 1986 that Mr Wolfgang Schaupensteiner, Frankfurt's

top anti-corruption prosecutor and doyen of a small group of officials committed to combating corruption, began investigating cases. His first investigation into bribes paid by building companies to officials in connection with public works contracts found bribery on a "Sicilian scale" and confirmed that corruption was endemic in the construc-

has started proceedings for 1,624 cases of bribery or the acceptance of bribes and secured more than 300 convictions. "The cases only come to light when you have specialists at work," he says. Yet a decade after beginning his campaign, he has only three prosecutors working with him, to cover the "Rhine-Main" industrial and banking region around Frankfurt

This lack of resources is not unique, in Munich five managers from Siemens, the electrical and electronics company, were convicted in 1992 for dispensing bribes totalling DM3.24m in connection with a DM108m contract for equip-ment in the city's sewerage works. Other successful prosecutions have followed, yet the city has just seven public prosecutors pursuing corrup-tion. "Germany is a long way from having a corruption unit in every big town or urban area," Mr Schau-As a result, there is little to hin-

ularly fertile field for corrupt activities, according to Mr Werner Rugemer, the author of a forthcoming book on corruption in Germany and abroad\*. He says there were numerous indications of "on average, a high level of criminal energy" among some of those who worked for the government in privatising the eastern economy. As in most societies, there has

always been some corruption in Germany. "People having their house built by their employees, that is business as usual," says Mr Dieter Lohse, the head of KPMG's international forensic accounting network for Germany in Berlin. But Mr Lobse senses a qualitative change because of the growing Since 1987, Mr Schaupensteiner number of forgeries of documents and invoices and balance sheets.

Mr Scholz also detects a new qual-

ity in German corruption, which he links to the Europe-wide problem of organised crime. "We have found that Mafia-like organisations are targeting public bureancracies with the aim of exercising corrupt influence - and we must put a stop to that quickly," he says. The economic downturn is not

helping. "Times get tougher: that increases temptation and the inclination of people to be corrupted," Mr Scholz says. And the high marginal tax rates in Germany's complex income tax system may encourage people to seek tax-free income through corruption. There is also evidence of a culture

of denial on corruption and financial malpractice. Germany registered a particularly low fraud awareness in the 1996 KPMG international fraud report, which was based on national fraud surveys in 18 countries. Asked whether fraud

man executives polled either did not respond or were not sure. The KPMG report noted this was despite "a number of large publicised frauds reported in Germany within the last decade".

Mr Schappensteiner argues that

the ability of German politicians to survive incidents that would lead to disgrace or worse in more rigorous societies undermines morality and encourages corruption. He cites the case of Mr Otto Lambsdorff, the leading Free Democrat politician who was fined DM180,000 in 1987. for tax evasion and assisting tax evasion in connection with contributions made by the Flick industrial group to his party. Mr Lambsdorff resigned as economics minister in 1984 before the affair came to court but his trial and conviction did not prevent his subsequent election as party leader.

ax rules which enable companies to treat bribes as a tax-deductible expense are another factor, according to Mr Rügemer. The Siemens case came to light only when a young tax official refused to accept a subcontractor's payment of DM100,000 to a city official as a legitimate expense.

The government maintains domestic bribes ceased to be taxdeductible in January. But Mr Schaupensteiner says companies still claim bribes as tax-deductible expenses. And bribes for contracts abroad are unaffected by the recent change in the law, according to Mr Rügemer, allowing payments to offi-cials in Germany to be channelled through foreign intermediaries.

The government plans to increase penalties for bribing officials. Certain misdemeanours under the law against unfair competition will be upgraded to criminal offences including price-fixing by companies competing for public contracts. The maximum jail sentence in

cases of corruption between companies is to be raised from one to three years - with the possibility of five years in extreme cases. Judges guilty of serious bribery offences

could face up to 10 years in jail.

To reduce opportunities for corruption in the public sector, the justice and interior ministries bave proposed the separation of planning, awarding and payment for public contracts. They have also suggested the establishment of contact points where whistiebiowers can report suspicions and the rotation of personnel in areas prone to corruption. Government officials are to be forbidden from accepting gifts linked to their job.

One suggestion - opposed by business - is a central register that would allow companies known for corrupt practices to be barred from competing for public contracts.

Germany has much to gain from cleaning up its act. Although there are no reliable figures, Mr Schaupensteiner estimates that bribery in relation to public works contracts amounts to DM10bn a year. Mr Rügemer estimates some DM7bn flows abroad in legal, untaxed bribes linked to foreign trade.

The country's politicians feel that the country is still a good deal cleaner than most of its rivals. "Seen internationally. I am con-vinced that we still have relatively bealthy structures," Mr Scholz says. But as the known cases of corrup-tion are only the tip of an iceberg, they are keen to avoid complacency.

\*Wirtschaften ohne Korruption? to be published by Verlag S. Fischer of Frankfurt in September.

# BSERVER

#### Cap'n Crunch man

■ A happy newsroom is an oxymoron, as Mark Willes has discovered in the year since he took charge of Times Mirror, care-worn publisher of the Los Angeles Times.
The mood remains sour long

after his first wave of cuts, which closed lossmakers, shrank the group's reporting and editing corps, and earned Willes the pet name of "Cereal Killer" - by virtue of his pest at General Mills. Aka "Iron Willes", he replaced

with cheap outsourced toughies the in-house security guards who protected employees making the perilons evening pilgrimage from the office to the staff car park. But it's a different story on Wall Street, which has been enchanted

by the speed of the turnround, as first quarter operating profits leapt 90 per cent. Analysts will probably he pleased by the aggression shown in Monday's 50 per cent cut - to 25 cents - in the LA Times main edition cover price. The Cereal Killer has almost as

many snappy ideas as the grumpy

phrasemongers on his payroll

Raisa's rag trade Looks as though Mikhail

Raisa, at least. As the Russian presidential election gets closer - and Gorbachev's chances of winning recede - his wife Raisa has apparently told a Russian newspaper that she is selling her evening dresses to Moscow second hand shops. The reason? She thinks ahe no longer needs

In her time, the nattily dressed Raisa Gorbachev was rather a popular figure in the west, praised for eschewing the blue overalls most former Soviet first ladies seemed to delight in. Not that such elegance pleased the home crowd, many of whom thought her rather pretentious and overdressed.

Maybe this is just a cunning plot? With just I per cent of the opinion polls currently backing Gorbachev, perhaps he's going for the poverty vote...

#### Champions lose First we had Ian Lang the

Trustbuster, enemy of the would-be giants of the electricity industry. Now we have Lang the scourge of national champions. To ram home just how opposed he is to the doctrine preached by his predecessor Michael Heseltine, the UK industry secretary will today abolish the National Enterprise Board.

Created just over two decades ago by Labour to invest in companies which ministers had bravely picked as winners, the board has never suffered from a surfeit of profits, or fans. Tory radical John Redwood, always fluent in attack, at least, penned "The National Enterprise Board: the Case for Euthanasia' just a year after the board's creation.

Evan though the best of the board's collection of patents and stakes was bundled into the private British Technology Group four years ago, the shell survived under Heseltine. No longer. Just in time for Labour to start it up

#### Khaki-chip stock

W You cannot fault Yassir Arafat on optimism. His officials may have spent the past week warning that peace is doomed if the new Israeli government sticks to its election slogans. But the president of the

Palestinian National Authority spent yesterday morning at the Department of Trade and Industry courting British business. In khaki garb not often seen in tha DTI's corridors, Arafat could

offer business folk his own hands-on experience. He had lent a hand as an engineer, he said, to build the new "Rafah international airport", well, airstrip, from which his trip began. And put in for overtime pay too.

The DTI briefing was rather less down to earth. It could offer no

economic figures on the region as "unfortunately, the Israeli authorities have never published separate statistics".

And its guide to "Doing business in the West Bank and Gaza' cautions that "most British firms enjoy a good reputation but regular visits are essential", and that price rather than quality is a deciding factor when obtaining You have been warned.

#### Hunger strike ■ Bouygues, the French

construction giant, certainly knows how to make its press conferences more palatable. Hacks invited yesterday to the grand headquarters outside Paris - to chew over the (already announced) 1995 results and to savour the prospects for coming months were plied with filet d'agneau au croustillant aux herbes, preceded by a salade de confit de canard à

l'oeuf poché. While journalists tucked in. Martin Bouygues, the company's chairman, spent the entire time standing in a corner fielding questions - without so much as a morsel to sustain him. If he displays half as much

fortitude and self-control in addressing the company's problems - losses in 1995 amounted to FFr2.9bn - investors probably don't have much to worry

# Financial Times

#### 100 years ago The Argentine Republic

From the Speech of President Uriburu at the opening of the Argentine Congress: "The Republic enjoys peace, both at bome and abroad. Our relations with Foreign Powers are on a footing of frank cordiality. We have no diplomatic reclamations to deal with, those we had have been satisfactorily solved. Amongst international questions the most significant has been that of our demarcation of the frontier-line with Chili, and the arrangements arrived at prepare practical solutions for any difficulties that may arise. Any differences concerning the location of boundary land marks in the Cordillera, which may not be solved in a friendly way, are to be submitted to the arbitration of Her Britannic Majesty,"

#### 50 years ago Many Copper Piants Closed

The supply of copper in the United States is becoming critical, and many manufacturers' plants are being forced to shut down for lack of copper. The new ceiling price has confused copper producers owing to the fact that the increase is allowed only to those producers who have reached new wage agreements with workers. and have had the agreements ratified by the proper Government authorities.

# FINANCIAL TIMES

Wednesday June 5 1996



Move marks vote of confidence in long-term future

# Tokyo backs \$300m loan for power plant in China

granted a \$300m official loan guarantee to Japanese contractors working on a 20-year power station project in southern China - the first time it has backed a scheme of this kind.

The deal, approved by Mr Shunpei Tsukahara, Japan's min-ister for international trade and industry, marks a vote of confidence in China's long-term economic and political future.

Previously, long-term private sector contracts in China were deemed too risky to merit Japanese government backing, according to an official at the international trade and industry

ministry The lead contractor for the \$1.2bn coal-fired power station is Mitsubishi Heavy Industries, backed by Mitsubishi Corporation, the trading company at the centre of its keiretsu, or corporate family. They account for \$900m of vided by the keiretsu bank, Bank of Tokyo-Mitsubishi.

A ministry official said final details had yet to be agreed, but the premium for the loan guarantee would be about \$10m. Joint venture partners would be two Hong Kong inves-tors and two Chinese power companies, he said.

The plant, at Zhuhai in the southern province of Guangdong, is due for completion in 1999 and will be operated by the Japanese consortium for 20 years before being handed over to the provincial government.

This kind of contract - a build operate and transfer (BOT) arrangement - is popular in countries whose governments lack the cash to make full pay-ment on completion of large projects such as power plants. A growing number of Japanese

trading companies have undertaken BOT power plants in east Asia, part of an attempt to diversify away from low margin export-import businesses.

Marubeni was the first, with a power station in the Philippins five years ago, followed by Nissho Iwai and Itochn elsewhere

For all their attractions, BOT contracts entail a political risk, because they assume that the government in power at the end of the contract will adhere to the conditions agreed by a distant predecessor.

Mr Takeshi Miki, the Japanese ministry'e deputy director of long-term trade insurance, said the ministry was prepared to assume \$300m of risk in Mitsubishi'a Chinese venture after receiving letters from both the provincial government and the central authorities in Beijing promising to support the project.

Another Japanese trading com-

pany was bidding for a similar ese power project, with a possible loan guarantee from the ministry, he said.

#### out fresh ceasefire before talks start By John Kampfner in London

Ireland.

The UK and frish governments were last night on the point of agreeing an agenda for the talks, with London appearing to drop its resistance to a powerful role for former US senator George

Both governments have made clear that Sinn Fein will not be allowed to attend the talks unless the IRA, its military wing; restores the ceasefire it broke in February. .

invited nine of the 10 parties who qualified during last Thursday's Ulster elections for places in the Northern Ireland forum.

in spite of coming fourth with an increased share of the vote. Mr John Bruton, the Irish prime minister, said he was confident the outstanding differences over the agenda would be

cuss the Northern Ireland process in a telephone call today with his UK counterpart, Mr John Major.

ists, said after meeting Mr Major that the British had bowed to pressure from Dublin and agreed to the appointment of a "supremo

cials, who acknowledge that a stood to have been given a similar message by Mr Major during their talks on Monday.

would be asked to concentrate mainly on the issue of decommissioning paramilitary weapons, which will be discussed in a subcommittee of the main talks.

# Pan-European media alliance seems close to falling apart

By Raymond Snoddy

One of Europe's most ambitious media alliances, bringing together Bertelsmann of Germany, British Sky Broadcasting and Canal Plns of France, is in danger of falling apart before it has properly got under way.

The heavyweight grouping was planning to launch as many as 100 channels of digital satellite television in Germany by this autumn in competition with the Kirch organisation, but little progress has been made so far. Mr Rupert Murdoch's News Corporation, the main sharebolder in BSkyB, and Canal Plus, the leading French pay television company, are so worried that they have written to Bertelsmann expressing their concern.

If Bertelsmann does not respond, the alliance, which

its present form. One of those involved last night described the situation as "serious".

The March announcement of the alliance sent shudders through other media groups in Europe, which feared they were being upstaged.

There has been concern all over Europe at the carving out of alliances to launch digital television, which has the potential to offer as many as 500 channels to European viewers. Europe is on the brink of the digital television revolution with both Canal Plus in France and Telepiu in Italy already launching digital services. Both groups plan to offer next season's French and Italian first division football live on a pay-per-view basis.

The Bertelsmann-BSkyB-Canal Plus group aimed to move on

pean countries, such as Italy. Attempts to create transnational groupings in the media have proved unstable in the past. A previous co-operation agree-ment between BSkyB and Canal Plus came to nothing.

In Bertelsmann's case, relationships became even more compli-cated in April when it was announced that after just two days of talks, the television interests of Compagnie Luxembourgeoise de Telediffusion (CLT) was

being merged with Ufa, Bertelsmann's television division.

Earlier, News Corporation had been negotiating with CLT about the possibility of taking a stake but the talks broke down. CLT then appeared to be excluded from the Canal Plus, BSkyB, Bertelsmann alliance only to become a potential partner again

change the current shareholding structure, with the founders of Packard Bell, NEC and Bull retaining their current equity

> Packard Bell had PC revenues of about \$4.5bn last year, the company said, and is anticipat

which has been struggling to make a profit, described the merger as the "next logical step" following NEC's earlier investments. Industry analysts suggested, bowever, that the move is a signal that the struggling group may soon loose its

Mr Tadashi Kaneko, NEC president, said his company had no plans to make additional investments in Packard Bell.

Por NEC, the merger offers an opportunity to expand quickly its presence in the US and Euro-pean PC markets, where it has had limited success to date.

# **IRA** rules

The IRA yesterday ruled out any prospect of restoring its ceasefire from terrorist activities before the start of next week's all-party talks on the future of Northern

In London, ministers are assuming that the statement was not simply issued as a bargaining chip. Recent weeks have not seen the impetus towards a cessation of hostilities that was evident in the run-up to the original cease-fire of August 1994.

Sir Patrick Mayhew, the UK Northern Ireland secretary, was bosting his second meeting of the day with Mr Dick Spring, Ireland's deputy prime minister, to resolve outstanding differ-

Sir Patrick yesterday formally

Sinn Féin was not on the list, resolved within 24 hours.

Mr Bruton is expected to dis-

The Rev Ian Paisley, leader of the hardline Democratic Union-

Even as chairman, Mr Mitchell

A close aide of US president Bill Clinton, Mr Mitchell was asked to head a three-man international commission to find a way round the impasse over arms. His report recommended that all eides commit themselves to six principles of non-violence.

# some loose ends, but - whatever the claims - the result will be something

Furthermore, the deal will bring in no new money, in the wake of a \$283m cash injection by NEC in February. That three-way transaction also will increase NEC's stake in the com-pany to 40 per cent - Groupe Bull has just under 20 per cent - leaving the

proprietary technology. So there is clearly an attraction to reducing

the industry. In an increasingly com-petitive, low-margin business, kets, are likely to wither on the vine.

#### Deutsche Telekom

Yesterday's results from Deutsche Telekom shed little light on the two issues crucial to the group's planned flotation in November. The first is the shape of the regulatory playing field. The German authorities are not even expected to pass the required laws until August and the only certainty is that Telekom will lose either way; a barsh regime might cut its revenues as rapidly as it is cutting costs, while lax regulation would encourage deeppocketed competitors such as Veba and British Telecom.

The second concern is Telekom's financial position. Net debt stands at a staggering DM100bn (\$65.5bn) and until 1997 much of the group's operating cash flow - DM24bn last year will be gobbled up by capital investment, principally to modernise its local networks. At the same time, the the company will have to absorb, is robust, it does raise concerns over the

# THE LEX COLUMN

expected to wipe 10 per cent off reve-

nnes this year. Telekom will also have to start paying corporation tax and dividends in the near future, which

further limits the scope for cutting

Moreover, the group will want to channel some of its scarce cash into

building up an international business

as its domestic empire becomes

exposed to competition. Already it has taken stakes in an array of Asian and

eastern European telecoms companies.

with little apparent logic to unite

them, though its Global One alliance

with Sprint and France Telecom looks

sensible. With all these uncertainties to be resolved before flotation, Deut-

sche Telekom has its work cut out in

The proposed merger of Packard Bell Electronics with NEC's personal computer operations outside Japan ties up short of a global PC business. NEC's Japanese PC operation, left outside the scope of the merger, represents the bulk of its business, while Packard Bell is still mainly a US operation.

involved the acquisition by Packard Bell of the assets of Zenith Data Systems, the struggling PC subsidiary of Groupe Bull. Still, the latest move distinct impression that NEC is now

in the driving seat.
Still, the deal solves problems for both parties. Packard Bell, despite its success in the US retail market, has struggled financially, but will now pre-sumably have access to deeper pockets. NEC, on the other hand, has seen its dominant position in Japan challenged due to its reliance on its own

dependency on that market. These problems are symptomatic of strength in a domestic market - even one as large as the US - is no longer enough. Unless they can find buyers or new partners, companies like Olivetti, present only in a few small mar-

#### Cadbury/Coca-Cola

the next five months.

It might seem bizarre for Cadbury Schweppes to sell a bottling business that dominates the UK soft drinks market, but the drinks to confectionery group has got a sweet deal. Coca-Cola & Schweppes Beverages (CCSB) is halfway through a 20-year franchise, the value of Cadbury's 51 per cent holding in which was set to shrink dramatically as it got closer to the end of its life. And there was only one potential buyer. So Cadbury has done well to achieve an earnings enhancing deal. Moreover, the disposal means Cadbury no longer has to proceed with an earnings diluting share placement. Interest cover should hit an exceedingly comfortable 10 times in 1997, leaving the group well placed to fund the expansion of its confectionery business in emerging markets. And this should feed through to its shares. But while the CCSB disposal leaves Cadbury's balance sheet looking

longer-term future of its drinks business. The stake has been acquired by Coca-Cola's bottling arm, Coca-Cola Enterprises (CCE), which has been busy acquiring bottling plants throughout Europe Coca-Cola and PepsiCo are becoming increasingly dominant in bottling worldwide. Cad-bury argues that it wants to concen-trate on building its drink brands, while leaving the production and distribution to someone else. And its sale of CCSB has numerous safety clauses; there is a 15-year licensing agreement for CCSB to continue producing Cadbury's drinks. However, CCE recently stropped producing A&W root beer for Cadbury. The cola giants could even-tually put the squeeze on other Cad-

#### Vodafone

To say Vodafone's results were above expectations is a rather backhanded compliment when expectations had fallen as they have. And although a 30 per cent increase in sarnings is respectable, a big chunk of this comes from an exceptionally sharp reduction in bad debts; sales in the UK are growing at a less dramatic 15 per cent a year. True, there are signs that Vodafone is coping robustly with the ravages of competition – it is, for instance, losing fewer customers: underlying "churn rates" are down to about 20 per cent. And the market is still growing at a formidable rate. The snag is that most new users tend to be low-usage domestic customers, not talkative businesses. So as revenues per subscriber fall market growth alone is unlikely to be enough to stop the operators denting each other's

If this were the whole picture, the shares' lofty multiple - 25 times last year's earnings - would be impossible to justify. The question is whether the undoubted prospects of Vodafona's international portfolio are enough to make up the gap, Although sharp international subscriber growth was one of the best features of yesterday's results, these businesses are still lossmaking as a group - and as a result, extremely difficult to value. But take a plausible stab - an enterprise value of £2.5bn - and the UK side is being implicitly valued at around 17 times last year's earnings, which is still aggressive. Take luto account the huge range of uncertainties in gauging the long-term potential of the international businesses, and the current share price looks no bargain.

> ditional Lex co on Camelot, Page 22

#### Personal computer makers in merger deal prominent, but not overarching role must be given to Mr Mitch-ell. Mr David Trimble, head of market leader. Packard Bell, the Ulster Unionists, was under-

Continued from Page 1

subsidiary. The portions of NEC's PC business to be merged with Packard Bell are relatively small and comprise primarily the company's US laptop com-

In Europe, the merged com-pany will include manufacturing operations in France that were sequired by Packard Bell as part of the deal with Bull.

The merger agreement was valued at about \$300m in NEC assets and goodwill that will be

transferred to the combined The transaction does not

**Europe today** 

Five-day forecast

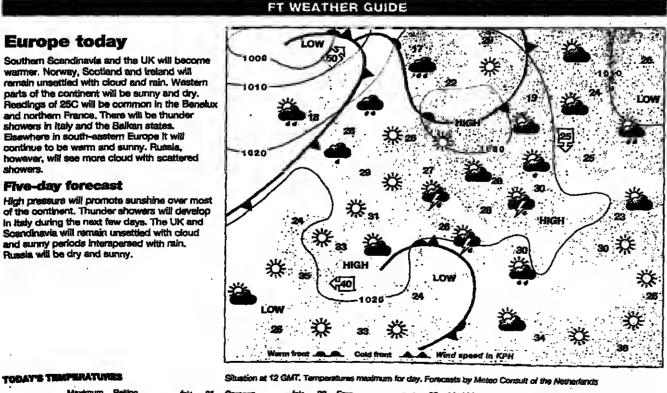
Russia will be dry and sunny.

warmer. Norway, Scotland and Ireland will remain unsettled with cloud and rain. West

and northern France. There will be thunder showers in Italy and the Balkan sta Elsewhere in south-eastern Europe it will continue to be warm and sunny. Russia,

positions. NEC and Packard Bell said the newly merged company would go public in about two ing strong growth this year, par-ticularly in Europe.

According to Dataquest figures, the combined Packard Bell and NEC operations would have had a US market share of 15.1 per cent in 1995 in terms of unit shipments, making it the US



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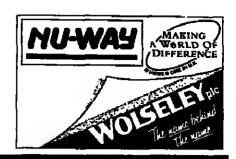


#### **FINANCIAL TIMES**

# **COMPANIES & MARKETS**

OTHE FINANCIAL TIMES LIMITED 1996

Wednesday June 5 1996



#### IN BRIEF

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#### **KLM-Northwest** link hits snag

KLM Royal Dutch Airline's partnership with the US carrier Northwest Airlines received a further setback yesterday when KLM announced it had suspended plans for the integration of the two airlines' global cargo operations. Ironically, Northwest enabled KLM to report a healthy increase in net profits last year. Page 18

Yiag poised to bid for Sandoz arm Viag, the German industrial conglomerate, is set to bid up to DM1.4bn (\$917m) for Master Builders Technology (MBT), a subsidiary of Sandoz the chemicals company. If successful the move would create Europe's largest building chemicals company, with sales of more than DM5bn. Page 18

Philips seeks to calm job fears Philips, the Dutch consumer electronics company. quashed speculation that it had planned to shed several thousand jobs in its consumer electronics division over the next few years. Page 18

Deutsche Telekom rises 47% Deutsche Telekom, the German telecoms operator to be partly privatised in November, yesterday reported a 47 per cent increase in net profits to DM5.3bn (\$3.47bn) but warned that sales this year were expected to be 10 per cent lower and would dent profits. Page 18

Air NZ deal with Ansett to take off New Zealand's Commerce Commission has cleared the way for Air New Zealand, the national carrier, to buy a 50 per cent stake in Ansett of Australia.

LA Times halves cover price The Los Angeles Times has halved the cover price of its main edition to 25 cents in a move to reinforce its position in its core market. Page 21

Sears head defends shoe shop sales Mr Liam Strong, chief executive of Sears, defended his board's decision to sell 379 unwanted shoe shops to Facia Group, where trading activities are now in tha hands of administrators and receivers, Meanwhile Sock Shop, the UK retailer yesterday collapsed into insolvency proceedings. Page 22

Eurotunnel chief upbeat on refinancing Hopes of a prompt settlement to Eurotunnel's refinancing talks were raised yesterday when Mr Patrick Ponsolle, the Anglo-French group's co-chairman, said it was "not unrealistic" for an outline refinancing plan to be in place by the group'a annual meeting on June 27, Page 22

Swissair steps up battle for Allders Swissair yesterday stepped up its campaign in its battle with BAA for the duty-free operations of Allders, the department store group. Page 22

& Hamber Dacilie

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# Cadbury sells UK soft drink plants CSFB sued

By Roderick Oram, Consumer industries Editor

Cadbury Schweppes sold its British soft drink plants yesterday for about £700m (\$1.1bn) in a deal designed to give it more financial end management resources to develop its confec-tionery and soft drink interests into global businesses.

The buyer of Cadbury's 51 per cent atake in Coca-Cola & Schweppes Beverages, its UK production joint venture with Coca-Cola of the US. is Coca-Cola Enterprises, the U8 bottler 44 per Enterprises is also buying

Cocs-Cola's 49 per cent stake in CCSB for a similar sum as part of its multi-billion buying spree of bottlers across Europe in recent "We're antiraly indiffarent

about being bottlers," said Mr Dominic Cadbury, chairman of Cadbury Schweppes. The group believes greater profits lie in being a brand franchiser selling concentrates to bottlers rather than in bottling itself.

Cadbury Schweppes ahares closed up 17p at 498p as the City

from the deal which will cut the group's gearing from 100 per cent to 44 per cent, give it money to seek acquisitions in confectionery and resolve some tensions between Coca-Cola and Cadbury

in the US and UK. . Cadbury Schweppes relations with Coke have got worse not better over recent years," said Mr Michael Landymore, an analyst with Henderson Crosthwaite. "1 can't find too much to fault in the deal."

The two companies pooled their resources in CCSB in 1986

to accelerate growth of their brands' market shares and profits. Each company markets its own brands but franchises them to CCSB which produces, distributes and sells the drinks. Both companies have benefited

from their arrangement but analysts said their priorities were beginning to diverge as their products increasingly competed with each other. "We didn't believe Coca-Cola

would renew CCSB's Coke franchise when it expired in 2006," said Mr David Wellings, Cadbury Schweppes' chief executive.

CCSB will continue to bottle Cadbury Schweppes brands such as Canada Dry and Schweppes tonic which together bave 6.5 per cent of the UK soft drinks market. Coca-Cola's brands have 32.6 per cent, of which Coke itself is 18.6 per cent, according to Beverage Digest, the US trade publi-

Cadbury Schweppes said it has safeguarded its brands through an initial 15-year licensing agreement with Enterprises with a possible 10-year extension. Lex, Page 18; Marketing strategy in a bottle, Page 21

# for £26m over advice to brewers

By John Mason and Nicholas Denton

CS First Boston, the investment bank owned by CS Holding, is being sued by a client for its work on a deal which was one of the first public takeovers upon which CSFB advised in the UK. CSFB acted negligently in advising Eicboff, the Swiss brewers, on its 1990 takeover of a UK

colour imaging company that turned out to be "probably" worthless, the High Court was told yesterday. Eichoff, a Lucerne-based family company, is suing CSFB for about £26m (\$40m) in damages, claiming it failed to give proper advice about taking over International Colour Management (ICM). Mr Anthony Boswood QC, for Eichoff, said: "CSFB had no conception at all of what is expected

of a London mercbant bank in the circumstances of an engagement such as this." The dispute centres on Eichoff's £14m takeover in June 1990 of ICM, a company in Newbury, Berkshire, that made specialised colour imaging equipment. By early 1990, ICM had run into desperate financial trouble, Mr Boswood said. Its debtors and overdraft had both risen substan-

tially and the company resorted to "possibly questionable window-dressing" in its accounts. ICM's financial situation continued to deteriorate quickly and it needed cash to survive. A new buyer was sought. Eichoff, a long-standing client of Credit Suisse, the commercial banking arm of CS Holding, decided to buy ICM and employed CSFB as its

sole adviser. The business suffered during the recession. After two years, Eichoff launched the case now before the High Court. Although CSFB charged a £250,000 fee, it "failed altogether" to perform some of its duties such as carrying ont proper due diligence, Mr Boswood said, adding that, had Eichoff been given proper advice. it would never have bought ICM

was engaged to carry out a fornegligence. "We think wa gave them completely professional and proper advice. They went into the acquisition with open eyes." said Mr Francois von Hurter, co-bead of European corporate finance at CSFB.

The case is expected to last about four weeks.

# **Bouygues** in talks to form telecoms alliance in France

Hill in Milan and Alan Cane in

Bouygnes, the French construction group, Stet of Italy, Cable and Wireless of the UK and Vaba of Germany are preparing to launch a telecoms venture in

Bouygues confirmed yesterday that it was in discussions with Stet, Italy's state-controlled telecommunications bolding company, and also indicated that Veba and C&W, two of its partners in another company, Bouygues Telecom, were also involved.

Bouygues, which last week became the third entrant in France's fest-growing mobile phone market, said the talks covered both mobile and fixed telecoms markets.

The negotiations are understood to focus on expansion in the French market. One telecoms executive close to the negotia-tions said yesterday: "We expect efforts to attract customers for this venture will begin within the next few weeks." Yesterday's disclosure comes

about two weeks after it emerged that Stet was in talks on a wider alliance with Veba and C&W. Stet confirmed yesterday it was also in contact with Bouvgues. French state company, which is teaming up in Italy with Infos-

Mr Martin Bouygues, Bouygues

encouraging.

After taking account of a number of provisions, the Bouygues group reported a net loss in 1995 of FFr2.9bn (\$560m), against net income of FFr578m in 1994. Initially it reported losses of more than FFr4bn but was obliged to reissue its results, adjusted by more than FFr1bn following pressure from the French government's accountancy regulator. The group dropped FFr1.2bn in exceptional write-downs which it had intended to make largely to cover start-up costs for its mobile

telephona network. It predicted yesterday that turnover for 1996 would be marginally up on last year's figure at FF182.5bn.

Stet management is likely to be questioned about the group's talks with potential partners tomorrow at a shareholders' meeting in Turin. Mr Romano Prodi, the new Ital-

ian prime minister, believes that the forging of an international alliance would ease the planned sale of a 64 per cent stake in Stet, held by Iri, the state holding com-

Mr Rod Olsen, C&W's acting chief executive, indicated last month that the company expected to complete talks on a possi-A joint venture in France with Veba and Stet within six would give Stet an opportunity to months, but he ruled out buying hit back at France Télécom, the a stake in the Italian company. At tomorrow's meeting, Iri is

expected to propose the reconfirtrada, the telecoms joint venture mation of Mr Ernesto Pascale between Olivetti, the Italian computer group, and Bell Atlantic, the US telecoms company. tively, chief executive and chairman. Stet owns majority stakes in Telecom Italia, the main Italchairman, said yesterday that the ian telephone operator, and Telefirst few days of the company's com Italia Mobile, the cellular mobile telecommunications oper-

#### Vodafone rises 28% to £475m



Vodafone, the mobila phone operator led by Sir Gerald Whent (above), exceeded expectations with a 28 per cent rise in annual pre-tax profits to £475.1m. Story, Page 22; Lex, Page 18

# First Austrian proposes to join forces with Creditanstalt

By Eric Frey in Vienna

First Austrian Savings Bank has proposed combining forces with Creditanstalt-Bankverein to creete Austria's largest financial group with assets of Sch911bn

Its plan to bring the two banks under a common holding com-pany would also resolve the Austrian government's struggle to complete the privatisation of Creditanstalt.

Under the plan, a new bolding company would be established by the foundation behind First Austrian and other members of a consortium formed two years ago to bid for the government's 70 per cent voting stake in Creditan-

The holding company would then acquire 75 per cent of the

shares of First Austrian from the foundation and would buy a majority interest in Creditan-

EA-Generali, tha Austrian subsidiary of the Italian insurance group which leads the consortium, yesterday signalled its approval of First Austrian's pro-

ntive of EA-Generali, urged Mr Viktor Klima, the Austrian finance minister, to arrive at a decision within the next three

Mr Klima, who is counting on the receipts from the sale of Creditanstalt to belp keep Austria on course to meet the convergence criteria for a single European currency, made no comment yes-

Mr Konrad Fuchs, chief execu-

make all strategic decisions for the two banks and create synergies in the back office. Co-operation would not extend to the front office where First Austrian and Creditanstalt would retain their identities.

tive of First Austrian, said the

The new group might eventu-lly list its shares on the Vienna stock exchange.

Creditanstalt is more than twice as large as First Austrian in asset terms and has a broader spread of activities. It is also a lesder in investment banking in central and eastern Europe. But its profit margin and outlook are weaker than those of the nimble savings bank.

The biggest difficulty is likely to be the price at which the government agrees to sell its shares.

joint holding company would which "was not worth £14m and was probably not worth anything" CSFB disputes the fact that it

#### Barry Riley

# A future savings boom looms for ageing Europe



feature of the global economy in the 1990s has been the consistent deterioration of public finances, with the ratio of debt to GDP in the OECD member countries rising

from about 58 per cent in 1990 to a likely 74 per cent for 1996. Is this trend dangerous? It depends on how easily fiscal deficits running to 4 per cent on average each year can be financed. According to a naw study on Savings and Wealth Accumulation in Europe, jointly published in London by Merrill Lynch and Coopers & Lybrand, a surge in private sector savings during the next 10 years will pro-

vide a big offsetting demand for public sector debt. It is easy to project Doomsday outturns for demographic trends. But the problem is understanding where the real pressure points will apply in practice. A key problem, for instance, is the progressive decline throughout Europe in the so-called "support ratio", which is the number of people of working age for every old-age pensioner. Typically, this will drop from about four in 1990

to two by about 2025. Yet at present, actual (rather than statutory) retirement ages are falling, while unemployment among people of working age (especially the young) is rising. This is an opparently perverse response to the perceived prob-

A financial manifestation of these trends is that the present value of the net unfunded pensions liabilities of several European governments runs to

notably for France and Italy. Forthe balance sheet than on it.

But as the paper by David Miles and Binit Patel explains, the same demographic pressures that are creating such deficits will also generate extra private sector saving. This is because practically all the saving is done by people aged 30 to 62, and espe-cially from 50 onwards. Although, in Europe, the pro-

Some \$150bn to \$200bn a year of extra personal savings will be generated

portion of people aged over 62 is rising, and will continue to do so until at least 2040, for the time being, the 50-62 age group is expanding too. The authors' simple life-cycle model indicates that the European household savings ratio will climb for 10 years.

A second, more sophisticated, model takes other factors into account, such as interest rates, inflation and the flow of govern-ment daht. This so-called dynamic model predicts a similar untrend in the private savings ratio but postpones the peak until about 2020.

Rither way, the important implication is that \$150bn to \$200bn a year of extra personal savings will be generated across Europe, at least for 10 years. Very roughly, this will balance public sector pension liabilities. This is quite different, inciden-

obvious upwards of 200 per cent of GDP, tally, from the pattern in Japan where the population structure is get irrelevant arguments about less favourable and the savings the 60 per cent Maastricht debt ceiling. Much more debt lurks off lower thronghout the period lower thronghout thro batween now and 2020. So Japan's days as the savings centre of the globe are numbered.

Even in Europe the problem will not be ao neatly solved, because the savings will pile up, especially in the UK, Spain and Italy but not so much in Germany or France. Substantial cross-border capital flows will therefore be required to avoid fiscal and social security crises in some countries.

Moreover, it is fundamentally

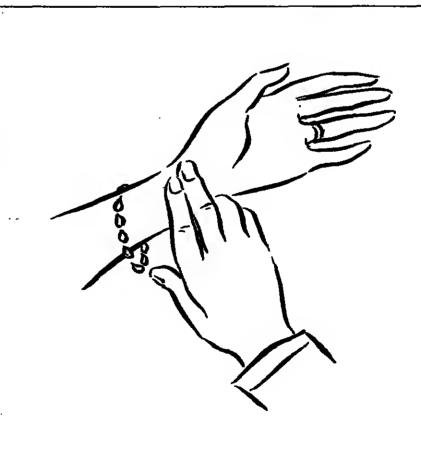
unsound to finance current pension outgoings through beavy debt issuance. This is to attempt to fob off the burden on to the next generation of taxpayers.

There is 6 better argument for pre-funding, and so building up balanced pension funds that can invest in domestic equities and overseas assets as well as government bonds. Providers of long-tarm savings products should enjoy a prolonged boom though not in Scandinevia, where forces driving up private-

sector savings are less powerful.

The anthors' optimistic conclusion is that there will be much greater intermediation through financial markets and institutions at the expense of pay-asyou-go recycling systems, and there will be an expansion of the stunted stock markets in Germany, France and Italy.

This may well be what the business planners at Merrill Lynch and Coopers & Lybrand want to hear. But another conclusion could be that Europe's public sector borrowing binge



# KPMG CORPORATE FINANCE. PRESCRIBED BY BUPA.

In May this year KPMG Corporate Finance advised 8UPA on their £68m acquisition

of Country House Nursing Homes from Greenalls. For a financial health check

contact KPMG Corporate Finance. Our finger is on the pulse,



#### COMPANIES AND FINANCE: EUROPE

# Viag poised to bid DM1.4bn for Sandoz arm

By Jenny Luesby in London

Viag the German industrial conglomerate, is set to bid up to DM1.4bn (\$917m) for Master Builders Technology, a subsidiary of Sandoz, the Swiss chemicals company.

If successful, the acquisition by SKW Trostberg, the publicly quoted chemicals subsidiary of Viag. would create Europe's largest building chemicals company, with sales of more than DM5bn. Some DM3bn of this would be to the

construction industry.
Sandoz has elready announced plans to sell or spin off MBT by April next year, as a condition of the merger with Ciba to form Novartis, MBT reported sales of SFr1.2bn (\$960m) in 1995.

However, Sandoz yesterday denied SKW Trostberg's claim that it was preparing an offer memorandum for MBT. Every option remained open, it said, including an IPO. Several companies are thought to be interested in buying MBT.

Analysts suggest a trade sale would raise between DML3bn and DM1.4bn, a price which Mr Wilhelm Simson, chairman of SKW, described as fair. He also said MBT would be a more suitable acquisition for SKW

than for a cement producer. SKW and MBT are leaders in the same field, specialising in building materials for professional builders that command premium prices thanks to their ease of use, or reduced prepaone for SKW, which since 1989 has transformed itself from a metallurgy company, focused on the removal of sulphur from furnaces, into a market leader

in food and building chemicals. This shift has doubled its sales from DM1.67bn in 1993 to DM3.88bn last year, but it has been based on acquisitions that have generated a heavy debt

SKW was debt-free at the end of 1994 - ahead of its flotation in Frankfurt and Munich in May last year. However, by the end of 1995 its net debt stood at DM470m, while writedowns from acquisitions had reduced net equity to DM670m. Analysts have suggested the company would need to raise further capital to finance the acquisition of MBT. However, Mr Kleus-Jürgen Schulz. SKW'e finance director who, with Mr Simson, is currently on a roadshow talking to analysts, said yesterday he did not "see any problem in raising another DM1bn of debt".

The company plans to divest its highly cash generative salt, desulphuring and fertiliser businesses to raise the balance of DM400m.

It will not be able to sell its German fertilisers business, which it acquired from the Treuhand, the agency formerly responsible for privatising East German assets, until 1998 However, it is thought that Viag, which owns 50.6 per cent of SKW, would guarantee any

# Fresh setback for KLM-Northwest pact

KLM Royal Dutch Airlines' problematic partnership with the US carrier Northwest Airlines received a further setback yesterday, as KLM announced it had suspended plans for the integration of the two airlines global cargo operations.

Mr Pieter Bouw, KLM prestdent, said that uncertainty over the two partners' relationehip presented an "insurmountable" obstacle to the cargo merger plan. His statement came as the

airline announced profits for the past financial year. Ironi-

relationship that enabled KLM to report a healthy increase in net profits for its 1995-96 fiscal

Mr Bouw added that an April forecast by Mr William Slattery, Northwest's cargo operations president, that a lobal integration plan could be announced by mid-summer was "premature"

the continuity of the relationship before we could firm up any specific product plans," Mr Bouw said.

He refused to be further drawn on reports circulating

KLM had "to be sure about

imminent unravelling of the Northwest pact, nor would be comment on speculation about KLM joining a possible alliance with British Airways and American Airlines.

Mr John Dasburg, Northwest's president, said last Friday his company earned some \$50m from the KLM alliance in 1995. However, he added, "the relationship is schizophrenic." He said KLM management equate alliance with governance. We do not. We've dug our feet in and told KLM it has no right to try and control us". Mr Dasburg added that if

Northwest could do likewise. He said he had been approached by Air France and Alitalia abont possible

The group's operating result dropped from F1 772m to F1 453m (\$265m) amid adverse exchange rate movements, a resumption of employee pension premiums, and a 7 per cent overcapacity in its cargo operation. However, a one-off revaluation of KLM's 25 per cent equity stake in Northwest pushed net profit up from F1 470m to F1 547m. Group revenue grew from

**Deutsche Telekom** 

Annual change 1994-95

Telekom Online customer:

Cable connections

Revenue from:

DMbn.

per share climbed from F15.08 to F15.86, and the dividend goes up from FI 1.50 to FI 2. Mr Bouw said it was too early to make a definite fore-

cast for the current year. KLM's result for the fourth quarter to March 31 went from negative Fl 89m to a net profit of Fl 8m, although opereting income fell F186m to a negative FI 100m.

KLM and the Dutch pilots union announced a deal on more flexible operating procedures while KLM also unveiled plans for a \$300m expansion of its European fleet.

GROUP NET PROFITS

#### Philips says jobs report is 'purely speculative'

By Alice Rewethorn

Philips, the Datch consumer electronics company, yesterday quashed speculation that it had formulated plans to shed several thousand jobs in its consumer electronics division over the next few years. However, the company stressed that it had not yet flualised plans to restructure its electronics activities which include televisions, videos and hi-fi systems - nor had it fixed on a specific number of job losses from its 40,000-strong workforce.

The company described a report in De Telegraaf, the Dutch newspaper - which claimed Philips will embark on a wide-ranging rationalisation programme that may involve plant closures - as "purely speculative".

Like other consumer electronics companies, Philips has faced weak demand and fierce price pressure in the 1990s. It said it had made no secret of the fact that it intended to restructure in consumer electronics and that this programme might involve job

Difficulties in the consumer electronics division contribated to a significant decline in Philips' first-quarter profits. Net profits feli to F1377m (\$220m) during the first three months of 1996, from F254m during the same period of 1995, while operating profits slid to Fl 690m from Fl 950m. The consumer electronics division went into the red in

the first quarter, from a Fl 162m profit to a loss of Fl 52m, following a decline in operating profits from Fi 449m in 1994 to Fl 118m in 1995. Philips has said it plans to improve the profitability of

the division in the late 1990s. with the aim of producing profits of Fl 1bn by 2000. However, it faces a tough task, given the emergence of rival manufacturers in lower-

some areas of the home enter-

Cont.

cost south-east Asian economies and growing competition from the computer industry in.

tainment market.

# Deutsche Telekom warns after 47% rise for year

Deutsche Telekom, the German telecoms operator to be partly privatised in November as part of one of the world's biggest share issues, yesterday reported a 47 per cent increase in net profits from DM3.6bn in 1994 to DM5.3bn (\$3.47bn) last year.

However, Mr Ron Sommer chief executive, warned that net profits for 1996 would fall by an unspecified amount cause sales this year were expected to be 10 per cent lower. This follows the introduction of value added tax and a number of tariff changes signed to make telephone calls cheaper.

Mr Sommer said sales in the

three months to the end of March had "risen slightly" once they had been adjusted for VAT. Further details, he said, would he published in September, when Dentsche Telekom reports half-yearly results for the first time.

Analysts said the figures boded well for the stock exchange listing, when the company plans to float 17 per cent of its equity. However, they said it had reached a stage of what one called "hyperprofitability" which was bound to attract the ettention of the future regulator.

"Comparing this with the

same stage in the flotation of British Telecommunications, the area of particular sensitivity is hyperprofitability," the analyst said. While Mr Sommer said Deut-

sche Telekom still planned to reach e turnover of DMS0bn by 2000 - considerably higher than the DM66.1bn turnover reported in 1995 - he declined to comment on how Deutsche

affected by growing competicompany had lost 2 percentage points of its market share last year, but retained about 90 per cent of the German market. Telecoms networks which belong to Germany's electricity utilities and other companies,

snch as the railway system.

will be liberalised on July 1 and the entire German tele coms market, the world's third biggest, is set to be opened to competition on January 1 1998. Deutsche Telekom yesterday got a taste of that competition Vebacom, the telecoms subsidiary of the Veba industrial conglomerate, complained for mally to the cartel authority that Deutsche Telekom had

insisted Vebacom could only Veba is developing separate run a digital television pilot digital TV technology with project if it used Deutsche Telekom's technical standards. Germany's KirchGruppe, the

Kirch, and Metro, Europe's largest retail group, based in

12.6%

# ING Barings Latin American team joins Deutsche Morgan Grenfell

By Antonia Sharpe and Nicholas Denton

ING Barings yesterday lost much of its highly-respected Latin American equity sales, research and trading team to Deutsche Morgan Grenfell, the acquisitive investment banking arm of Deutsche Bank.

Mr Ric Haller, head of emerging markets at DMG, said the hiring of

44 research, sales and trading staff in Mexico, Brazil, Chile and New York would allow 'DMG to go from the second division into the premier

The defections are a setback for Internationale Nederlanden Groep, the Dutch bank which rescued Barings in February 1995 in order to acquire its emerging markets equity operations.

However, ING Barings' Latin American operations, suffering from the dearth of primary equity issues, are believed to have lost money in the past year. ING Barings executives said the bank would rebuild its operations in the region more cheaply. "This is a rather elegant way of restructuring the organisation," said Mr Michael Baring, head of equity broking at ING Barings.

There has been discontent with ING management among the Latin American equity team for several months. DMG claimed it did not have to offer the lucrative packages associated with its hirings over the past year because it had been approached by the team. "They came to us," Mr Haller said.

DMG has an established presence in emerging markets and is one of

the group's most profitable divisions. It employs 275 staff in 18 emerging markets in eastern Europe, Russia, Asia, Africa and Latin America, However, its strengths lie in debt trading and issuance, and financial advisory work, rather than in equities.

The defection of the Latin American team has raised speculation that ING Barings' south-east Asian equities team will also be plundered. Two traders have recently left, but ING Barings said a mass defection in the region, one of the most profitable for the securities operations, was not expected.

ING Barings staff in Argentina and Peru are expected to join DMG later this week while its Colombia team is believed to have defected to Santander, the Spanish bank,

All of these securities having been sold, this announcement appears as a metter of record only

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For the period June 03, 1996 to September 02, 1996 the new rate has been fixed at 11,09375 % P.A. Next payment date: September 02, 1996

Coupon nr: 10

Amount: FRF 2 804,25 for the denomination of FRF 28 042,53 for the denomination of

The Principal Paying Agent SOCKETE GENERALE BANK & TRUST - LUXEMBOURG

SOCIETE GENERALE USD 500,000,000 UNDATED SUBORDINATED FLOATING RATE NOTES ISIN CODE: FR00082021 Pursuant to the Terms and Conditions of the Bonds, notice is hereby given to the Bondholders that USD 84,200,000 have been repurchased by the Issuer. Nominal outstanding: USD 320,800,000 The Principal Paying Agent SOCIETE GENERALE BANK & TRUST - LUXEMBOURG

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#### **TENDER NOTICE** UK GOVERNMENT **ECU TREASURY BILLS**

For tender on 11 June 1996 1. The Bank of England announces the issue by Her Majesty's Treasury of ECU 1,000 million nominal of UK Government ECU Treasury Bills, for tender on a bid-yield basis on Tuesday, 11 June 1996. An additional ECU 50 million nominal of Bills will be allotted directly to the Bank of England for the account of the Exchange Equalisation Account.

2. The ECU 1,000 million of Bills to be issued by tender will be dated 13 June 1996 and will be in the following

ECU 200 million for maturity on 11 July 1996 ECU 500 million for maturity on 12 September 1996 ECU 300 million for maturity on 12 December 1996

3. All tenders must be made on the printed application terms available on request from the Bank of England. Completed application forms must be lodged, by hand, at the Bank at England, Customar Settlement Services, Threadneedle Street, London not later than 10.30 a.m., London time, an Tuesday, 11 June 1996. Payment for Bills allotted will be due on Thursday, 13 June 1996.

Each tender at each yield for each maturity must be made on a separate application form for a minimum of ECU 500,000 nominal. Tandars above this minimum must be in multiples of ECU 100,000 nominal.

5. Tenders must be made on a yield basis (calculated on the basis of the actual number of days to maturity and e year of 360 days) rounded to two decimal places. Each application form must state the maturity date of the Bills for which application is made, the yield bid and the amount tendered for.

amount tendered for.

6. Notification will be despatched on the day nt the tender to applicants whose tenders have been accepted in whole or in part. For applicants who have requested credit of Bills in global form to their account with ESO, Euroclear or CEDEL, Bills will be credited in the relevant systema against paymant. For applicants who heve requested definitive Bills, Bills will be available for collection at Customer Settlement Services, Bank of England after 1.30 p.m. nn Thursday, 13 Juna 1996 provided cleared funds have been credited to the Bank of England's ECU Treasury Bills Account No. 59005516 with Lloyds Bank Pic, Bank Relations, St George's House, PO Box 787, 6-8 Eastcheap, London EC3M 1LL. Definitive Bills will be available in amounts of ECU 10,000, ECU 50,000, ECU 1000,000, ECU 5,000,000 and ECU 10,000,000 nominal.

7. Her Majesty's Treasury reserves the right to reject any

8. The arrangements for the tender are set out in more detail in the informetian Memorandum an the UK Government ECU Treasury Bill programme issued by the Bank of England on behalf of Her Majesty's Treasury on 28 March 1989, and in supplements to the information Memorandum. All tandars will be aubjact to the provisions of the information Memorandum (se supplemented) and to the provisions of this notice.

Her Majesty's Treasury reserves the right to reject any or part of any tender.

supplemented) and to the provisions of this nonce.

9. The ECU 50 million of Bills to be allotted directly to the Bank of England for the account of the Exchange Equalisation Account will be for meturity on 12 December 1996. These Bills may be made available through sale and repurchase transactions to the market makers lieted in the Informetion Memorendum (as supplemented) in order to facilitate settlement.

10. Copies of the Information Mamarandum (and aupplements to it) mey be obtained at the Bank of England. UK Government ECU Treasury Bills are issued under the Treasury Bills Act 1877, the National Loans Act 1968 end the Treasury Bills Regulations 1968 ee amended.

Bank of England 4 June 1996





#### COMPANIES AND FINANCE: EUROPE

#### **NEWS DIGEST**

#### **OMV** bolstered by Chemie Linz sale

OMV, he Austrian oil and gas group, yesterday reported a 7 per cert rise in first-quarter pre-tax profit as receipts from the sale of the Chemie Linz chemicals division made up for weaker operating earnings. Pre-tax profit climbed from Sch950n to Sch1.02bn (\$95m) in the first three months while net profit edged up 1 per cent, from Sch850m to Sch860m, the company announced at its annual shareholder meeting.

But operating earnings fell 13 per cent, from Sch1.08bn to

Sch94m, because of weakness in the plastics division, where operating profits tumbled from Sch240m to Sch60m. Another trouble spot was the refinery business, where earnings fell from Sch460m to Sch260m on lower prices for petrochemicals. Other divisions posted better results. In oil exploration and production, a higher crude oil price helped OMV to swing from an operating loss of Sch30m to a profit of Sch50m. In the natural gas business, operating earnings climbed from Sch48tm to Sch460m, and earnings from chemicals rose from Sch12tm to Sch190m. Group sales dropped 7 per cent, from Sch19tm to Sch17.8tm, reflecting the sale of Chemie Linz

#### Losses widen at Alcatel Sel/

Alcate Sel, the German unit of France's Alcatel Alsthom, the Frenci transport, telecoms and engineering group, suffered a 1995 operating loss of about DM300m (\$197m), widening from a DMISON operating loss the year before. The company said its loss from ordinary business was about DMS50m, narrowing from MM460m in 1994. Sales shrank 16 per cent to DM5.4bn.

Theparent company injected DM1.3bn in fresh capital, of whichDM928m was used to cover the operating loss and expenses related to the correction of its share. The remaining DM37 was used to increase capital.

#### ING strengthens Polish stake

ING, the Dutch financial services group, has raised its stake in Polant's Bank Slaski by 7.25 percentage points to 33.15 per cent. The bank added that it had been given the option to acquir a majority stake through the purchase of a further 20 per cert. Both the increase of its shareholding and the future optionwere agreed with the Polish Finance Ministry, ING said. The option, exercisable next month, is subject to final approval by Polisb authorities.

The Jutch company acquired its initial 25.9 per cent stake in Bank Slaski in 1994 as part of a strategic thrust into eastern and central European markets. Bank Slaski, one of the most profitable commercial banks in Poland, had more than 1m accoun holders and total assets equivalent to F14.2bn (\$2.46bm) at the end of 1995, and earned F) 157m last year, ING David Brown, Amsterdam

#### Fokker to complete 15 aircraft

Fokker, the Dutch aerospace group, said the Amsterdam district court had granted its receivers permission to allow the completon of 15 aircraft. Production of the six Fokker 50s and nine Folker 70s will keep the bankrupt company's production lines open at least until April of next year, providing work for about 45 people.

Afterit was decided to complete production of two Fokker

50s and two Fokker 70s, binding agreements have been made with clients, partners and suppliers for the conditions under which another seven Fokker 70s and four Fokker 50s will be built an delivered," Fokker said. Fokker said the decision to till the orders was based on the idea that "delivery of these aircraft to clients would yield a financial result that will ... benefit Fokker's creditors". AFX News, Amsterdam

#### Finland in talks on Kemira arm

Kemira, he Finnish chemicals group, said yesterday it would start talls with the ministry of trade and industry about selling its Vihtavuori gunpowder subsidiary to the Finnish state. "If the negotiators agree, 50.1 per cent of the shares (in Vihtavuori) will be transferred at the beginning of 1997. The remainor would be acquired by the state not later than January 2 2000, but could be transferred in spring 1997," Kemira said. The Finnish state had "defence-related interests' in Vihtawori, which manufactures powder and amuunition and quarrying supplies. Annual net sales are about FM150m

#### Generali arm to sell Spanish unit

Assicurationi Generali, the Italian insurance group, said its Spanish subsidiary had agreed to sell the Barcelona-based Caja de Frevision y Socorro to Spain's Aegon Union

Aseguratora. Generali said its Spanish company, La Societa Holding de Entidade de Seguros, based in Madrid, had agreed to sell the Barcelons-based group which in 1995 had premium income of more that Pta10bn (\$77.5m). Generali gave no financial details of the deel, but said it was part of a reorganisation of its interests in Spain, a nation which it called "fundamental" to Generalik strategy. Generali recorded premium income of Pta237bn in 1995 from its Spanish interests. Reuter, R

#### Bilfinger & Berger Bau forecast Billinger's Berger Bau, the German construction group, said

yesterdayit expected satisfactory earnings this year and a yesterdayir experies action of the state of year and a slight increase in output, it also expected 1996 output to rise 4 per cent b DMR.9bn (\$5.88bn). In 1995, output rose from DM7.64bn year earlier to DM8.57bn. Mr Christian Roth, chairman said the company's production capacity would be fully used into the fourth quarter of 1996 because of high orders in hand.

But the company, one of Germany's top five construction groups, sad in its annual report that the German building sector was expected to shrink more than 2 per cent this year. A 4 per cent rise in output in east Germany would be insufficient to offset an expected 5 per cent fall in west Germany, Billinger said. Only housing investment would rise in east Germany and for the first time since unification, public sector and immercial construction would decline 2 per cent

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Goldman Sachs (Cayman) Trust, Limited

# Norway seeks to sell 19.8% of Den norske Bank

Norway yesterday launched its biggest bank re-privatisation issue since the loan loss crisis of the early 1990s, announcing a public offering of 19.8 per cent of Den norske Bank, a stake worth NKr2.6bn (\$387m)

at current market prices.

The offering, to Norwegian and foreign investors, will reduce the state's holding in DnB, the country's largest financial services group, to 52 per cent and follows a similar duction in the government's holding in Christiania Bank and the sale of all its shares in Fokus Bank and Union Bank of

The state, which was forced to pump NKr25bn into the banking system when a spate of loan losses threatened the banks with collapse at the turn of the decade, is now seeking to claw back a significant proportion of the taxpayers'

The sale of the latest DnB stake should bring to more than NKr8bn the total raised in re-privatisation issues.

But the Labour government has sparked some controversy by remaining committed to retaining a majority stake in both DnB and Christiania, the two biggest gronps, at least until next year. It then intends to seek par-

Norsk Hydro, the Norwegian conglomerate, will be investing more than \$250m in Asia over the next three to four years, according to Mr Thor Hakstad, executive vice-president, AP-DJ reports from New Delhi.

The investments included those in petrochemical projects planned in the Middle East, Malaysia and India, he said. The company was also planning a "small venture" in China in extrusions for the aniomobile industry.

The projects has are expected to cost a total of more than the projects in the Arman and the cost and

31bn, with Norsk Hydro's share about 25 per cent of the total cost. Mr Hakstad said the petrochemical project in the Middle East was likely to cost about \$600m. He declined to give details of the petrochemical project planned in India. "It is in an early stage. But here our exposure might be more than 25 per best,"

the holdings to stakes of ebout ensure stability in the banking one-third. But it does not at system.

present want to go further, The latest offer of 127m arguing that the state should shares in DnB by the Governremain the principal owner to ment Bank Investment Fund,

SBC Warburg is to be global co-ordinator and adviser for the overall offering. Co-lead managers for the international offering will be Morgan Stanlev and Alfred Berg, with Fondsfinans and DnB Fonds leading the Norwegian

No pre-set division of the offering between domestic and overseas investors has been established by the Government Bank Investment Fund. But it said there would be an unprecin Norway to attract retail

investors. The price is to be set on June

which holds the state's bank shareholdings, will take place from June 10 to June 21.

24 after a global book building process. DnB shares closed yesterday at NKr20.40, up NKr0.50. Mr Jan Hopland, the investment fund's chief executive.

said he believed the timing was good for the issue as the Norwegian economy was strong and DnB was returning solid results having long since overcome its loan loss problems. In the first quarter, DnB

reported a record net profit of NKr778m, up from NKr565m in the same period last year. However, the results were flattered by generous write-backs of sums previously set aside for loan losses and low tax tainable, and DnB warned it had to further reduce costs.

# Cofinec launches \$80m global offering

Cofinec, the rapidly growing central European packaging group founded in 1969 by Mr Carlo De Benedetti, the Italian industrialist, has launched a global offering to raise up to \$80m. The company also announced yesterday it was to list on the Luxembourg and Budapest stock exchanges. The latter listing will make it the first non-Hungarian company to join the Budapest market. Most of the proceeds of the

offer will go to shareholders, which include Cerus, the French-registered holding company which groups Mr De Benedetti's non-Italian busi-ness interests. Cerus owns 45 per cent of Coffnec's existing share capital. The move is in line with plans by Mr De Benedetti, who is also chairman of Olivetti, the troubled office equipment group, to sell non-core assets and reduce debt.

The offering, which will include a capital increase, is for more than 60 per cent of

the company. It will include an international placement of Global Depositary Receipts, month opened a plant in each representing one share, and a much smaller public Poland. offer in Hungary. The price range for the international. offering is Ft200-Ft225, with Barings and Creditanstalt

co-ordinators. The European Bank for Reconstruction and Development is expected to sell its small stake in the company.

The listing will boost the BSE, which is short of good quality stocks. The BUX index of the BSE, which has only 41 stocks with total capitalisation of about \$3.5bn, closed up 28 points yesterday at 2,949. Cofinec's consolidated turn-Securities the joint global

over was FFr673m (\$130m) in 1995. Operating profit was FFr66m while net income rose Coffnec also has a 50 per cent 20 per cent to FFr17m.

#### Paris appoints Béchat as head of Snecma

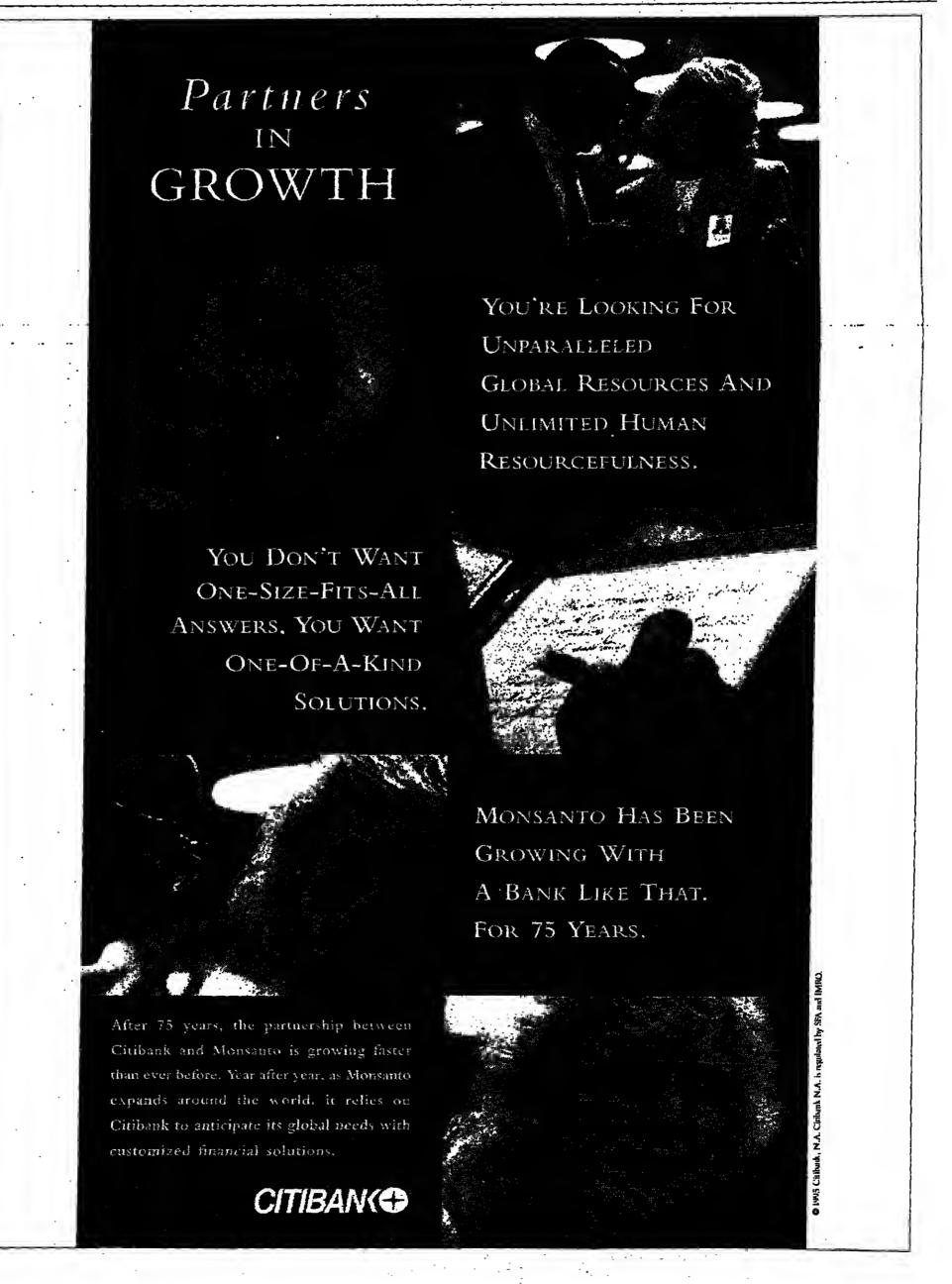
By Devid Buchan in Paris

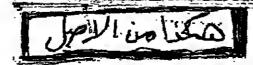
Mr Jean-Paul Béchat was yesterday appointed by the French government to the board of Snecma to replace Mr Bernard Dufour, who was last week dismissed as head of the state-owned aeroengine

The 53-year-old Mr Bechat but before that spent most of soon take a stake in Snecma.

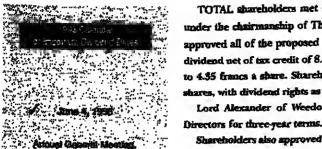
his career at Snecma. His priority is expected to be to patch up Specma's relations with its long-term partner, General Electric of the US, which dete-

ricrated under Mr Dufour. The French government had become concerned that the rift with GR would undermine the prospects of the loss-making Specma returning to profit and has been head of the SNPE being privatised. It is now con-explosives company since 1994, sidered possible that GE may





#### TOTAL SHAREHOLDERS, MEET IN ANNUAL AND EXTRAORDINARY MEETINGS



Clindend Declaration

Ame 10, 1995

June 10 to July 9

Period to sucreito option to

TOTAL shareholders met on June 4, 1996 for their annual and extraordinary meetings under the chairmanship of Thierry Desmarest, Chairman and Chief Executive Officer. They approved all of the proposed resolutions, as well as the 1995 accounts and the payment of a dividend net of tax credit of 8.70 French france a share, up 9% from 1994. Tax credit amounts

to 4.55 france a share. Shareholders were again given the option of taking their dividend in shares, with dividend rights as of January 1, 1996, at a price per share of 329 france: Lord Alexander of Weedon and Mr Bertrand Jacquillat were elected to the Board of

Shareholders also approved the change in the By-Laws following the reduction in the French State's interest in TOTAL to less than 1%.

#### Quotes from the Chairman

In his comments on TOTAL's performance in 1995, Mr Desmarest said that, "I have set as goal for our company the rapid percent in an initial phase. We should reach this figure in 1998, if we conservatively assume a business environment that is similar to the 1994 and 1995 average, I am convinced that we will be able to raise ROE even higher over the medium term.

"Improved profitability will result both from growth in husiness and from growing businesses like Upstream and Chemicals will benefit from scale economies as volumes rise, slower-growing businesses will be asked to make special efforts to reduce fixed costs. For example, our dedication to further lowering the break-even point at our refineries is essential for the return of the Downstream sector to a better profitability. Even greater efforts must be made in mature markets in the United States and Europe. In the US, we have decided to reduce refining capacity by closing the Ark City refinery. In Europe, there is no way to avoid participating, in one way or the other, in an industry-wide restructuring, especially to France.

In speaking about early 1996, Mr Desmarest also indicated that "the Upstream siness has improved its performance. thanks to increasing production outside the Middle East by more than 20 percent. together with stronger oil prices and a slightly higher dollar compared to the 1995 average. Downstream has been affected by contrasting trends: the dollar-franc exchange rate improved slightly, refining margins remained poor (albeit slightly better than in 1995), and rketing in the United Kingdom suffered a difficult price war. The Chemicals business benefited from substantial growth through acquisiouns, but has suffered from flat demand in certain European markets. These factors were reflected in the Company's first-quarter sales, which increased by 14

Business growth coupled with "slightly ter husiness conditions than in 1994 and 1995 and Company-wide efforts to improve productivity should lead to a substantial increase, of about one-third, in operating income over the first five months of 1996 in relation to the year-earlier period".

The 1995 Annual Report may be obtained upon request to TOTAL, Corporate Communications



http://www.webnet.fr/total TOTAL, Tour TOTAL, 24 Cours Micheles 92069 Paris La Defense Cedex France

# NOTICE TO SHAREHOLDERS

Shareholders held oo June 4, 1996 has set the 1995 dividend at FF.8.70 per share.

A tax credit of FF.4.35 will be added to

Payment of the dividend, the amount of which will be dependent on the terms of the double tax convendoo between France and Great Britain, will be settled upon presentation of the coupon and completion of form RF 4 GB.

Residents may lodge this form with the Bank acting as their ageor, either in France or in the United Kingdom, at any time up to December 31 of the second year following the collection date of the coupons. As a result of French legislation on the "dematerializadon" of securities, payment of the coupons will be

from June 5, 1996:

from the shereholder.

Switzerland

Chem and Vevey, May 30, 1996

The Annual General Meeting of made through the banks with which the securities have been deposited.

> The Annual Geoeral Meeting has decided to offer each shareholder the option to receive the 1995 dividend either in eash or in shares; the issue price of such shares - carrying dividend and voting rights effective from January 1, 1996 - has been set at FF 329 per share.

> Shareholders opting to receive the dividend in the form of shares will be required to make such election between June 10, 1996, the dividend record date, and

> Any shareholder who has not made such election by July 5, 1996, shall automatically receive the dividend in cash, payable as of

> > The Board of Directors



TOTAL SOCIETE ANONYME CAPITAL STOCK: FE11,814,726,050 R.C.S. NANTERRE B 542 051 180 HEAD OFFICE: TOUR TOTAL - 24 COURS MICHELET, PUTEAUX (HAUTS DE SEINE) FRANCE

**NESTLÉ S.A., CHAM and VEVEY** 

Payment of dividend

Notice is hereby given to shareholders that following a resolution of

the General Meeting of shereholders held on May 30, 1996, the

following dividend for the business year 1995 will be paid to them as

gross CHF 26.50 per share

All dividends will be paid by bank transfer to the shareholder's

account or by cheque, in accordance with the instructions received

less Swiss federal withholding tax of 35%.



due December 1998

6.25% per annum for the interest period 5 June 1996 to 5 December 1996, Interest payable on 5 December 1996 will amount to US\$158.85 per US\$5,000 note and US\$3,177.08 per US\$100,000 note.



e & Lekenter Building Socie £200,000,000

Floating Rate Notes

For the interest period 31st May, 1996 to 30th August, 1996

e Notes will carry a Rate of terrest of 6.275 per cent. per

concer with interest amounts of £156.02 per£10.000 principal and

£1,560.18 per£100.000 principal, psysble on 30th August, 1995. Land on the Landborg State Backery.

The Top

**Opportunities** 

Section

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management

positions.

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Will Thomas

+44 0171 873 3779

due 2000

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The notes will bear interest of

Agent: Morgan Guaranty Trust Company **JPMorgan** 

CREDIT COMMERCIAL
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REVERSE FLOATER
BONDS DUE 1998
ISIN CODE:
X50044141363 HE PRINCIPAL PAYING AGENT SOCIETE GENERALE BANK & TRUST LUXEMBOURG

By Mark Ashurst Metropolitan Life, the South African insurer controlled by New Africa Investments, the country's Jargest black-owned conglomerate, has posted a 44 per cent rise in attributable profit for the six months to

March, from R37m to R54m (\$12.4m). Strong gains in its predomi-nantly black market boosted premium income by 33 per cent to R952.7m, against R716.4m. Earnings per share rose 42 per cent from 56 cents to 78 cents, and the dividend rose proportionally to 51.5 cents.

Analysts welcomed the results, but noted that Metlife's actuarial valuation, which is

annualised, had been amended to include 50 per cent of total earnings and dividends from the previous full year. The interim earnings and dividend, which are calculated on the basis of this valuation, had previously been annualised by including results for only the preceding six months

44% rise at halfway stage

The growth is a bit misleading, but the results are still good. Metlife has lots of opportunity in the emerging [black] market, and we are confident of e strong performance in the second half," said Mr James Slabbert, analyst et Smith Borkum Hare in Johannes-

. Income from investments rose by 32 per cent to R326.1m, compared with R246.4m, helped

by a sustained bull run on Johannesburg equities.
The market value of Metlife's

investment assets - cited by several analysts as the best indicator of Metlife's likely per-formance in the second half increased 32 per cent from R7.7bn to R9.5bn as total assets

topped R10bn.
The newly established employee benefits division achieved 128 per cent growth in single premium income to R106.9m, against R47.8m, from a broad client base.

Recurring premium incomes. the mainstay of Metlife's business, increased 26 per cent to R843.8m, against R668.6m last time, despite last year's relatively low inflation rate of 6-7 DET CENT

# being negotiated, is likely to be between NZ\$325m and NZ\$850m, reflecting Ansett's Earlier this year the New

from Australian regulators

Mr Ken Cowley, Ansett's chairman and chief executive who is also chief of the Australian operations of News Corp. said: "Now that we have settled the New Zealani regulatory issues, we look firward to early resolution of the regulatory steps in Austalia enable us to conclude this major transaction."

Tata Tea

profits slide

despite 30%

rise in sales

Tata Tea, India's fast

expanding plantation group, suffered a drop in profits for the past financial year despite

In the year to March 31.

sales grew more than 30 per cent, from Rs3.98bn

Rs5.19bn (\$149m). Bnt net

profits fell 22 per sent, from Rs590m to Rs46:m, after

higher provisions for interest

Earnings per (bare fell sharply from 8:12.45 to Rs9.48. The divident, however.

is maintained at Rsi a share.

The company sale that "on a strictly comparablebasis, prof-

its from its main operations

increased by nearly Rs140m".

But profits overal suffered a

setback because "other income fell sharply, from 1s463.9m to

Rs243.3m, because the figure in 1994-95 included about

Rs210m from tax-ree capital

gains and an exceptional divi-

dend from the company's

The group also recorded a sharp rise in expenditure, up

nearly 30 per cent on a year

Tata Tea's revenue from

exports advanced from

Rs693m last year o Rs1.05bn.

Analysis said that to Tata

investment subsidary".

earlier to Rs4.47br.

np 51.5 per cent.

By Kunal Bose

# Lend Lease to raise A\$500m from sale of Westpac shares

PROFILE:

LEND LEASE

NZ clears way for Air

New Zealand-Ansett deal

step forward and would lead to

benefits to both travellers and

Analysts said the deal was

expected to make Air New Zea-

land and Ansett a more bal-

anced competitor with Qantas and British Airways on routes

in the region, especially to

rebuffed several times over the

past two years as it tried to enter the Australian domestic

market and link with Ansett.

A move by Air New Zealand

to buy News Corporation's 50

per cent stake in Ansett fell

through because of the high

price News put on its Ansett

shares. This led Ansett's TNT

to offer its shares to Air New

Zealand, et a lower price, of

about NZ\$425m (US\$289m).

Air New Zealand has been

By Bruce Jacques in Sydney

By Terry Hall in Wellington

and Bruce Jacques in Sydney

New Zealand's Commerce

Commission, the country's

competition watchdog, yester-

day cleared the way for the

national carrier, Air New Zea-land, to buy a 50 per cent stake

in one of its main competitors,

The scheme, under which

the New Zealand carrier buys

the stake from TNT, the Aus-

tralian transportation group, is

expected to be finalised within

The eventual purchase price

Air New Zealand said the

agreement, which will now

require Australian regulatory

approval, was a significant

is expected to be substantially

below the original offer.

Ansett of Australia.

a month.

Lend Lease, the Australian financial services group, is set to reise about A\$500m (US\$401m) through the sale of a large part of its shareholding in Westpac, the Australian

Lend Lease announced yes-terday it would offer 100m to 120m Westpac shares - representing about 6 per cent of the bank's capital - to institutional investors through an issue of four-year warrants.

That would leave Lend Lease with about 3 per cent of West-pac's capital, which it has guaranteed will not be sold before April 1997. The Westpac sale offer opened yesterday and will close on Friday with e facility for investors to swap Westpac shares for warrants.

Westpac shares fell 27 cents to A\$4.72 on Australian stock exchanges yesterday, but Lend Lease still expects to book an abnormal profit of about A\$150m on the sale.

Lend Lease paid more than A\$600m to buy into Westpac in 1993 at A\$3 a share, taking advantage of a period of price weakness following e string of

poor results from the bank. The company has since strongly defended its investment, which drew criticism from ratings agencies, as a strategic lever for participation in Australia's continuing bank

rationalisation. But yesterday Mr David Higgins, Lend Lease's managing director, changed tack saying that while the company had been well rewarded for its opportune time to grow core

Ofvicienci vield - 150 - 100 Earnings per share Current share price 1001 92 93 94 95 SHARE PRICE **FARNINGS PER SHARE** relative to the All Ordinaries index

COMPANIES AND FINANCE: ASIA-PACIFIC/INT'L

declining profitability.

main domestic comp

Zealand Commerce Commis-

sion refused to approve the

TNT-Air New Zealand deal

because of monopoly concerns over the future of Ansett New

Zealand, Air New Zealand's

News Corporation then offered to buy Ansett New Zea-

land and operate it as e stand-

alone company, a move also

approved yesterdey by the

Mr Devid Mortimer, TNT's

managing director, said his

company and the others hoped

to conclude the deal by the end

ATTRIBUTABLE PROFIT

mmerce commission.

of this month

businesses which the company

could directly influence. This transaction enables us to pursue the next generation of broadly-based financial services... rather than restrict our ambitions to traditional banking," he said.

"Until these new investments become fully income producing, we receive a reli-able dividend stream from our continued participation in

Yesterday's Lend Lease announcement also indicated that the timing of the divest-ment decision had been influenced by the inquiry into the np recently by the federal vernment

The announcement said the expected ebnormal profit from the deal would be largely offset in the company's June 30 annual results by provisions against overseas and technology investments. Lend Lease shares rose 13 cents to A\$19.26 on Australian stock exchanges yesterday.

• The Australian government will today announce details of the sale of its 51 per cent sharebolding in the Commonwealth Bank. With the bank's shares closing unchanged yesterday

Tea's credit, it had raised core business profits by 40 per cent even though tee prices remained depressed for the at A\$10, the sale is expected to first quarter of the year. Australian financial system set raise eboot A\$1.5bn. Metropolitan Life records

Mr Ratan Tata chairman, said: "Prospects for the cur-rent year appear to be bright.

The company's production and prices of tea so far are ahead of last year". Confident about the Tata acquired Boran and Kon-

long-term prospects for tea. ikar estates in Assam and Butaburi garden in West Bengal. The ecquisitions should enable Tata Tea to produce more tha 62m kg if tea a year. It has also continued to expand its coffee business

through takeovers.

CINVen, the UK fund manager, is set to acquire the mobile radio business of Philips India, AFX-įsia reports

from Bombay.
Philips Electronics, the parent company, said CINVen and Philips India were bolding talks on the deails of the acquisition of the business. which is currently held by Philips Telecommunications

Philips India recently raised its stake in PTE from 51 per cent to 160 per cent to facilitate the acquisition.

## Hambro Pacific in HK bank alliance

By Louise Lucas in Hong Kong

Hambro Pacific, the Hong Kong-based corporate finance advisory arm of Hambros, the London-listed merchant banking and financial services group, has taken a domestic commercial bank on board in an attempt to expand its business in the colony.

Under the deal, Dah Sing Financial Holdings, a Hong Kong-listed banking and fmancial services group, will take 30 per cent of Hambro Pacific, which will now be known as

Hambro Dah Sing. Hambros will continue to own the remaining 70 per cent. The price paid has not been disclosed, but directors say it is "not huge".

The alliance will give Hambro access to Dah Sing's extensive client base, while allowing Dah Sing to offer rations.

its clients a greater product

The move is in line with pre-dictions of a shake-out within the banking community in

Many in the industry believe that the survivors will be the large international groups, boasting the full range of services, together with a number of strong regional groups; those operating in niche areas, such as Hambro Pacific, will have to forge local allfances.

The newly-created company will look at opportunities in China when they arise, but Hong Kong is likely to con-tinue as the predominant source of earnings.

To date, Hambro Pacific has been involved in areas such as mergers and acquisitions in the colony, acting for both the government and private corpo-

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INDONESIA FUND LIMITED TO THE HOLDERS OF WARRANT IDES Your attention is drawn to your right to subscribe for Ordinary shares of USSO.10 each of INDONESIA FUNO LIMITED ("the Company") and such right may be exercised in the manner set out below from 5th Jane 1996 to 4th July 1996. In order to exercise your adsartation rights, your lossemetors should be accompanied by a paymen equal to USS10.00 for each Ordinary state for which you are subscribing. The following information may help you to decide whether or not to exercise you subscription rights this year. The middle market quotations from one of the independent

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This notice is sere in accordance with the terms of the Warrant Deposit Agree

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#### **COMPANIES AND FINANCE: THE AMERICAS**

# European marketing strategy in a bottle

Coca-Cola is streamlining distribution as competition intensifies, writes Roderick Oram

Coca-Cola map of Europe," a senior executive enthused yesterday as the company unveiled a £1.2bn (\$1.9bn) deal in the UK, the latest in a series across the continent over the past few

Responding to rapidly changing market conditions in eastern and western Europe, Coca-Cola is pulling together an array of bottlers for the soft drink it is trying to make ubiquitous. It is retaining the role of brand manager, marketer and franchiser while it hives off production to "anchor bottlers", large multinational companies which it believes know more about pro-duction and distribution than

The strategy is an attempt to replicate its success in the US over the past 10 years. During this time it has devolved most of its production to Coca-Cola Enterprises, a listed company in which it has a 44 per cent stake, and other big bottlers. As the US market stagnates, it is turning its attention to foreign markets where soft drink consumption remains far lower than in the US.

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In eastern Europe, its main bottler has become Coca-Cola Amatil, the Australian-listed company which in the past few years has moved into 11 European countries.

In western Europe, Coca-



Rolling along: bottler Coca-Cola Enterprises has spent \$3bn on recent acquisitions

sale price was \$366m but that included two US bottlers as well. Last month, it sold bottiers in France and Belgium to Enterprises for \$915m. Yesterday, Enterprises paid

£1.2bn for Coca-Cola & Schweppes Beverages, owned 49 per cent by Coca-Cola and 51 per cent by Cadbury Schweppes, the UK confectionery and soft drink maker. In total, Enterprises has spent about \$3bn on recent acquisitions, including one in the US, which will push its net debt to just over \$7bn, or about 62 per cent of total capital.

Enterprises argues its experi-Cola's first foray in this strategy was to sell its Dutch bottling company in 1993 to Coca-Cola Enterprises. The Dutch operations, for example, have increased

profits at an annual rate of 23 per cent since it took them over. In the UK, CCSB is a highly regarded operator, but it can improve by drawing on the expanding bottling network, Enterprises says.

his network will also belp Coca-Cola better serve retailers, restaurant owners and other customers who are becoming increasingly multinational. "Coca-Cola Enterprises bas very real skills to bring to that equation," says Mr Neville Isdell, president of Coca-Cola's Greater Europe division.

Coca-Cola is not devolving all its bottling. It has just pulled together, for example, its east German bottling into a

It was increasingly hard to resolve those tensions with a ointly-owned bottler. A cleaner solution has been for Cadhury Schweppes to cease bottling and franchising its brands to Enterprises.

But behind the deal lies an intriguing bet on the future of the UK soft drinks market. Although per-capita consump-tion in the UK is lower than the US, not all analysts believe the market will grow rapidly. Moreover, it will remain subjected to intense pricing pressures from retailers and minor

to Coca-Cola in the US since the UK group's acquisition of

Dr Pepper/Seven-Up last year,

hut their strategies were

diverging in the UK. Coca-Cola

wants to push Coke; Cadbury

Schweppes wants to push its

own range of soft drinks such

as Schweppes tonic, Canada

Dry. Oasis and Dr Pepper.

Against this background, Cadbury Schweppes is wagering it can make more money selling soft drink concentrates to the bottler and marketing hard to grow its brand shares. Enterprise believes its skills and growing Europeanisation of soft drinks offer it a hig opportunity. Coca-Cola has hedged its bet by becoming a franchiser with a captive

Schweppes resolves the grow-ing dilemma it had with the Conceivably, all three are right, as they were in the US. But there lurks the possibility Cadhury Schweppes yester-day played down growing ten-sions between it and Cocathat retail competition and consumer patterns in Europe Cola. Not only has the UK are more challenging than

#### **Futures** executives seek rule clarification

By Laurie Morse in Chicago

Futures industry executives will today ask Congress to clarify US laws governing foreign exchange trading in a bearing to be held in Washing-

The hearing, before the Senate agriculture committee, will re-open the issue of derivatives regulation in the US. Derivatives legislation, under the Commodity Exchange Act, was last overhauled in 1992. US futures exchanges will make several proposals to the committee, including a request that exchanges be exempted from making costly invest-

ments in technology to track

More pressing is the uncertainty created by the Treasury amendment to the act which appears to exempt interbank foreign exchange trading from Commodity Futures Trading Commission oversight. The US Snpreme Conrt last week agreed to consider a landmark case that could define the regulatory boundaries of the agency for cash currency trad-

Futures exchanges are seeking legislative clarification with would put them on equal regulatory footing with overthe-counter currency markets.
"If off-exchange, profession-al-institutional interbank markets in these instruments are to be exempt completely from regulation, the exchange market in the same instruments should enjoy the same exemptive treatment." Mr Patrick Arbor, chairman of the Chicago Board of Trade, will tell the committee today.

The US futures broking community will similarly seek clarification of the Treasury amendment. "The Futures Industry Association is concerned about the myriad legal issues that must be addressed when institutional clients enter into privately negotiated OTC transactions. Not only are these issues complex, but the consequences of an OTC transaction being re-characterised as a futures contract are potentially draconian," said Mr Laurence Molluer, chairman of the FIA.

#### **NEWS DIGEST**

# Moody's upgrades **Greyhound Lines**

Creybound Lines, the struggling US hus company, yesterday received a nod of approval for its new management strategy when Moody's Investors Service, the US credit rating agency. upgraded its debt. But the shares, which have recently bounced back from earlier lows on recovery hopes, were off Sta

Greyhound has been hit by a combination of low-fare competition from US airlines and an unsuccessful attempt to respond to that threat by cutting longer routes and setting up hub-and-spoke operations. Under Mr Craig Lentzsch, who took over as chief executive at the end of 1994, the company has restored long-haul routes, improved services and cut fares.

Moody's said it was upgrading Greyhound's senior notes to single-B3 from Caa, and its convertible debentures to Caa from Ca, citing improved operational and financial performance. It also assigned a single-B1 rating to Greyhound's new, \$80m credit facility, which is secured against the company's assets. "A new management team, in place for about a year and a half, has employed a back-to-basics strategy that has improved day-to-day operations and boosted ridership," Moody's said. It added that long-term profitability depended on the success of added that long-term probactors revenue initiatives now under way.

Richard Tomkins, New York

#### Black shakes up Southam board

Mr Conrad Black, the international publisher, is proposing to replace all five independent directors of Southam, the Canadian newspaper chain he now controls. The new directors proposed are Mr Derek Burney, a former Canadian ambassador in Washington and a senior executive at BCE, the telecommunications group; Mr Charles Dubin, retired Ontario chief justice; Montreal lawyers Mrs Donna Kaufman and Mr Yves Fortier - the latter a former Canadian ambassador at the UN; and Mr Stephen Jarislowsky, a Montreal pension fund

They would replace five directors openly criticised by Mr Black for blocking Southam's return to adequate financial returns. The directors have said they were acting in all shareholders' interests – particularly the minority bolders.

Last month, Mr Black's Hollinger bolding company bought out Power Corp of Canada's 20.5 per cent stake in Southam, giving it 41 per cent control. It plans to raise this to 50 per cent through private share deals and then offer Hollinger stock for the remaining Southam shares. Robert Gibbens, Montrea

#### Western Canada oil expansion

Western Canada's oil sands and heavy oil industry is starting a C\$5.6bn (US\$4.1bn) five-year expansion plan spurred by favourable technical developments and a better tax regime. Over the next 25 years, the industry says, production of synthetic crude could triple from 400,000 b/d to L2m b/d, with investment of a further C\$25bn.

The industry is now concentrated in the Fort McMurray area of northern Alberta, where the two big tar sands producers, Syncrude Canada and Suncor, operate large mining and treatment operations. The resulting synthetic crude is pipelined to Edmonton for direct processing. Syncrude is investing C\$2bn over four years to bring output to well over 200,000 h/d, It is mainly owned by Alberta Energy, Imperial Oil, PanCanadian Petroleum, Petro-Canada, and Canadian Occidental Suncor will invest C\$900m to upgrade and expand

Other investments totalling about C\$2.5bn will be made to develop reserves or raise output at other oil sands and heavy oil locations in southern and northern Alberta in the next four Robert Gibbens

# LA Times halves cover price of main edition

The Los Angeles Times, banner-carrier for the Times Mirror publishing group, has halved the cover price of its main edition to 25 cents in an aggressive move to reinforce its position in its core market.

Falling newsprint prices made the cut possible, officials said, and followed an increase from 35 cents in January in response to higher paper costs. However, the cover price will remain, unchanged outside the broadsheet's main markets in

LA County, Orange County, Ventura County and the San Fernando Valley. It costs \$1 in Santa Barbara, 80 miles north of LA.

The move follows almost a year of restructuring under new chief executive, Mr Mark Willes, a former senior General Mills manager whose first actions included cutting almost 2,500 jobs in the group.

Although other papers and publications have been closed or shrunk, the LA Times has been given special attention. Foreign editorial coverage has been reduced and local affairs have been drawn in sharper

Most circulation and advertising sales efforts are now concentrated in Los Angeles and environs, where the paper faces especially fierce competition from the Orange County Register to the south and The Daily News, which serves the inland San Fernando Valley. National papers, including

USA Today and The New York Times, and dozens of freesheets also contribute to the

Orange County has increased 20 per cent since 1989, while total sales have fallen almost 9 per cent over the same period. Part of this decline - a fall in weekday sales of 37,000 was reported last year - is the

been pinned at 25 cents in these bordering markets for

several years. According to

company data, circulation in

new venture with two indepen-

dent sontbern German

Cadbury Schweppes all expressed satisfaction yester-

day with their UK deal. Coca-

Cola gains an auchor bottler

which will be far more closely

tied to it than was the joint venture with Cadbury Schwep-

pes; Enterprises becomes the

anchor bottler in the largest

European carbonated soft

drinks market; and Cadbury

joint venture.

Coca-Cola, Enterprises and

result of withdrawal of home delivery services in areas "of no interest to our main advertisers", an official said. Delivpressure. ery has been stopped in San Because of local conditions, the LA Times cover price has and Arizona, for example.

Meanwhile, the group claims to have improved its service for Los Angeles' large Spanishspeaking community. Following the closure of the lossmaking Nuestra Tiempo, a free-sheet co-production between Times Mirror and La Opinion, 1s now being distributed to 200,000 homes a

Mr Willes, who in January said he felt there was "some room to breathe", has set himself a target of a 50 per cent increase in earnings per share in his first year. Observer, Page 15

# KfW's 1995 Report on Cooperation with more than 100 Developing Countries is now available.



On behalf of the Government of the Federal Republic of Germany, KfW finances investment projects and project-related consulting services in developing countries ("Financial Cooperation"). For this purpose, KfW has committed DM 3.5 billion from Federal Budget funds in loans and grants in 1995.

The 1995 Annual Report "Perspectives of Financial Cooperation" is now available. Numerous practical examples, ranging from the protection of the environment and natural resources in Niger, sewage disposal in Turkey, to family planning in Pakistan, are presented. They illustrate the manifold aspects of KfW's cooperation with more than 100 developing countries.

The primary objective of all efforts is to permanently improve the living standards of the people in Third World countries through development projects. Germany thereby renders an important contribution towards the safeguarding of global peace.

For further information on Financial Cooperation with developing countries, please contact us to obtain KfW's 1995 Annual Report "Perspectives of Financial Cooperation" or to receive additional information on our work in general. We look forward to hearing from

Kreditanstalt für Wiederaufbau

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# **ACCOLADES IN ASIA ING BARINGS**

In January 1996 World Equity magazine voted ING Barings' public offer for C&P Homes the Asian Issue of the Year. In the same month Asia Risk Manager

voted us IPO House of the Year. In February 1996 Asiamoney voted our Exchangeable Bonds with Warrants

deal for Siam Sindhorn the Equity Linked Deal of the Year. And, not surprisingly, in March 1996, it voted us Equity House of the Year 1995.

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This notice is issued in compliance with the requirements of The London Stock Exchange Limited (the "London Stock Exchange"). It does not constitute an invitation or offer to any person to subscribe for, or purchase, any securities. Application has been made to the London Stock Exchange under the provisions of Chapter 20 of the Listing Rulet made under Section 142 of the Financial Services Act 1986 for the whole of the ordinary share capital of PPL Therapautics plc ("PPL"), issued and to be issued, to be admitted to the Official List. It is expected that admission to the Official List will become effection and that dealings in the ordinary shares of 50p each will



PPL Therapeutics plc

ted and registered in England and Wales under the Companies Act 1985 with registered number 2745752)

**Placing** 

#### HAMBROS BANK LIMITED

of 7,800,000 new ordinary shares of 50p each at 450p per share payable in full on application

Share capital following the Placing

Issued and fully paid

20,000,000 40,000,000

11,180,140 22,360,280

ordinary shares of 500 each

PPL is one of the world's leading companies in the transgenic production of human proteins for therapeutic and nutritional use.

Copies of the prospectus of PPL, dated 4 June 1996, which has been approved by the Lendon Stock Exchange as required by the Listing Rules made under Section 142 of the Financial Services Act, 1986, have been published and are available for collection during normal business hours on any weekday (Saturdays and the public bolidays excepted), up to and including 19 June 1996 from the Companies Announcements Office of the London Stock Exchange, London, Stock Exchange Tower, Capel Court Entrance, off Bartholomew Lane, London EC2N 1HP and up to and including 7 June 1996 from:

> PPL Therapeuties plc Roslin Edinburgh EH25 9PP

Hambros Bank Limited 13 Park Square East Leeds LSI 2LF and 41 Tower Hill

5 Tune 1996

#### TriGem Computer Inc.

Notice of Bondholders' Additional Option to Redeem Bonds on 4th June, 1998

Rights to Revoke Notices of Redemption

To the Holders of the Company's U.S. \$30,000,000

3½ per cent. Convertible Bonds due 2005

table at the option of the Bondholders in 1996)

NOTICE IS HEREBY GIVEN that following the execution by TriGon Computer Inc. (the "Company") and Bankers Trust Continuey Limited (the "Trustee") of a Supplemental Trust Deed duted 2nd April, 1996 which amended the Terms and Conditions the Bonds (as more fully described in the nortice to Bondsoldens which appeared in this newspaper on 12th April, 1996), Dongas Securities Co., Led. has now calculated the percentage of principal amount at which Bonds to be redecated on 4th June, 1996 will be absent the Trustee Trustee. edeemed (the "1998 Put Price").

The 1998 Put Price has been calculated by Dongsub Securities Co., Ltd. in accordance with the formula set out in the Sep hed above and has been set at 130.978 per cent, of the principal amount of the Bonds, All Bondholdens contemplating taking any action in respect of the mattern contemped to this notion should seek a as to their tree position and, if in any doubt, should also seek independent furnical advice.

Copies of the Supplemental Trust Deed which implements the above amendments are available at the specified offices of each of the Psyling Agents are out below.

1 Appold Street

5th June, 1996

Paying Agents

Bankert Trust Lucestabouty S.A. P.O. Box 807 14 Boulevard F.D. Roosevelz L-2450 Luxemboury

CH-4002 Bent TriGem Computer Loc.

#### THE REGENT MOGHUL FUND LIMITED (Incorporated in the Cayman Islands)

Notice is hereby given that the directors of The Regent Moghul Fund Limited (hereinafter referred to as "the Fund") have decided to continue the temporary suspension of valuations and dealings of the Fund for a further period of six months until 28 November. 1996. This decision has been taken after due consideration of the political and illiquid conditions existing in the Bangladesh market. The directors believe that the continued suspension of valuations and dealings is in the best interests of the shareholders of the Fund. The directors will continue to monitor investments in the Fund and an appropriate announcement will be made on or before 28 November, 1996 as to whether to lift the suspension or convert the Fund to a closed-ended Fund.

By Order of the Board Terence NG Corporate Secretary TN/ml

Date: 4 June, 1996

CREDIT LOCAL DE
FRANCE
FRE 500.000.000
REVERSE FLOATER
BONDS DUE 1999
ISIN CODE:
X30040821414
For the period June 3, 1995
to December 2, 1996
the new rate has been fixed
at 18,13342 % P.A.
Next payment date:

Next payment date: December 2, 1996

December 2, 1996 Coupon nr : 7 Amount : FRF 901,63 for the denomination of FRF 10 000 FRF 9016,34 for the lenomination of FRF 100 000 THE PRINCIPAL PAYING AGENT SOCIETE GENERALE BANK & TRUST LUXEMBOURG

EUROPEAN COAL AND STEEL COMMUNITY GBP 52,700,000 FLOATING RATE NOTES DUE 1937 ISIN CODE: XS0037796298

For the period May 31, 1996 to November 29, 1996 the new rate has been fixed at 5,6375 % P.A.

Next payment date: November 29, 1996

November 29, 1996 Coupon nr: 9 Amount: GBP 28, 11 for the lenomination of GBP 1 000 GBP 281, 10 for the lenomination of GBP 10 000

THE PRINCIPAL PAYING AGENT SOCIETE GENERALE BANK & TRUST LUXEMBOURG



Pursuant to the Dutch Major Holdings in Listed Companies Disclosure Act ("Wet Melding Zeggenschap"), Akzo Nobel N.V. – formerly Akzo N.V. – states that it has been informed by: N.V. Arnhemsche Maatschappij tot het houden van aandelen Akzo Nobel, Herengracht 420, 1017 BZ Amsterdam, the Netherlands, that said entity is holder of shares in the Company equivalent to an interest of 7,5 percent, of which 0,0 percent is designated indirect and 0.0 percent potential.

Amhem, May 31, 1996 Akzo Nobel N.V.

MARGINED CURRENCY DEALING CALL TOLL-FREE

Laurion

 Republe managed accounts Limited liability guaranteed Spain 900 994914
Suntzerland 155 3548 Lowest margin deposits (29b-59b)

Belgium 0800 71955 Finland 0800 40129016 Grecce 00807 40129016 Austria (660 7480 Denmark 8001 0430 France 0590 6446 Ireland 1 800 555018 Industrial 1 800 55 Narway 8001 1181

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#### **COMPANIES AND FINANCE: UK**

# Swissair offers £145m for Allders arm

Swissair yesterday tried to seize the initiative in its acrimonious battle with BAA for the duty free operations of Allders, the department store

Allders said Swissair had indicated in a letter to investors that it would make a firm offer of £145m if 40 per cent of Aliders' shareholders give their support. Swissair had

respond by close of business tonight

Allders, which until now has said the BAA bid of £130m was the only firm offer it had received, took the unusual step of announcing it would seek "clarification of the respective positions of Swissair and BAA". It acknowledged the sitnation had changed and asked shareholders to take no action.

properly consider," it said.

asked the shareholders to what appears to be a sensible respond by close of business offer which shareholders can BAA will decide on its next

move this morning. It declined to comment on whether it would consider increasing its offer. We understand that Swissair has made a seventh conditional offer, albeit of no greater value and with no more guarantees than the others. However, we will consider the matter in the morning".

Swissair, has said that subject to the support of Allders' shareholders it will make a cash offer on terms "which in all material respects will be the same as those applicable to the proposed sala to BAA", which

was announced on May 17. Swissair, it is claimed, changed the value of its offer for Allders International, the duty free arm of Allders, as many as six times during talks

SBC Warburg, on behalf of in April and May.
Swissafr has said that subject When the deal was announced Aliders said the BAA bid was the only firm one that it had received and agreed to recommend it to an extraordinary meeting on June 10. Swissair then claimed that it had tabled an offer of £145m. which Aliders hed chosen to

> ignore. The main shareholders have declined to comment on their

# Receiver for Sock Shop Vodafone beats

"For the first tima there is

By William Lewis, Rose Tierren and Norma Cohen

Sock Shop yesterday became the final part of the Pacia Group, previously the UK's second largest privately owned retailing chain, to enter insolvency proceedings, as institu-tional shareholders criticised Sears' relationship with Facia.

Yesterday morning KMPG. tha accountancy firm, was appointed as receiver to Sock Shop by United Mizrahi Bank, which is owed £7.3m by Facia.

KMPG will now try to find a buyer for Sock Shop's 97 retail outlets. It is the second time in six years that Sock Shop, a niche retailer, bas entered insolvency proceedings. KMPG has also been

appointed by United Mizrahi Bank as receiver to about 500 of Facia's speciality outlets. including Contessa and Torq. Grant Thornton has been appointed as receiver to Salis-

On Monday the High Court appointed Price Waterhouse as administrator to 380 shoe outlets including Freeman Hardy Willis and Curtess. PW said last night that it was "unclear who owned those shoe shops. KPMG says they are owned personally by Mr Stepben Hinchliffe, Facia's chairman. Last night Mr Rinchliffe said he was still trying to raise tha finance to pay off United Miz-

rahi Bank and retake control of the shops in receivership. KMPG said it had not yet received an offer from Mr Hinchliffe, but that there had been approximately 30 "serious expressions" of interest from potential purchasers of the companies in receivership.

including Sock Shop. Mr Alan Barrett, Price Waterhouse's administrator. said that he also boped to find buyers for the shoe businesses. On Monday Sears successfully petitioned in the High Court for Price Waterhouse to be appointed as administrators after money owed to it hy Facia grew to about £26m. Sears bas made total provisions of £73.8m following the

August and February.
Following the sales, Mr Bar-

RESULTS

Leeds NEPC

Oyent & Robinson
Robert Whenson
St Januar's Place
Sep Industrial
Startly 5
Scotti (Jan) Ests

nes Water ...

sale of the licences to occupy 380 shoe outlets to Facia last



Stephen Hinchliffe: seeks funds

hold the leases of the proper ties and pay the rent It had also been contracted by Facia to carry several manage tasks including the paying of

Following the sales, Mr Bar-rett said Sears continued to pute with Sears.

363.4 36.5 52.6 21.2 6.85 19.9 763.8 706 12.2

31.2 193.3 1,487 24 148.3

28.2 12 4.44

Yr to Apr 30 42.48 (37.3 ) 57 whs to Apr 30 116.7 (- ) Yr to Mer 31 300.5 (232.4 )

LEX COMMENT

Camelot

The chances of a player eccumulating £51m from the

highest in the world, even as source Carpolot.

UK's National Lottery are

Yr to Mer 30
6 miles to Mer 31
Yr to Mer 31
5 miles to Mer 31

B mens to Mar 31
Yr to Mar 31
Yr to Mar 31

6 mittes to Mar 31

6 miles to Mar 31 6 miles to Mar 31

\_ Wr to Mar 31

... Yr to Mar 24 Yr to Mar 31 Yr to Mar 31

Yr to Jen 31 - Yr to Mar 30 - Yr to Mar 31

- 4r to Mar 31



Mr Hinchliffe said that Facia

42.1 1.82 19.59 0.91 1.31 0.889 147.9 78.34 2.37 3.27 518.5 0.284 47.6 3.03 1.829 3.15

228.74 28.6

1.2 (1.06 ) 0.88 (·) 2.7 (2.3L)

Earnings shown basic. Dividende shown not, Figures in brackets are for corresponding period. After exceptional charge. VAfter exceptional credit, †On increased copital. Ill Gross Income SuSM stock. \$Pro forms. Anchores to special.

(12 ) (31.3 ) (186,414)

(1,428 ) (23.5 ) (107.9 )

(-) (28.8) (10.7) (3.52)

5.76 3.8† 69.9† 1.7 9.46 3.8† 50.5† 24.5 3.21 7.4 11.5 25 1.18† 13.7

10.65 (9.4 ) 0.77 (- ) 1.5 (1.31L )

(1.31 ) (51.8**V** ) (0.1 ) (1.11 ) (1.81 ) (1.83 ) (63.8 ) (1.83 ) (3.61 ) (60.4 ) (60.4 )

(7.02) (7.02) (20.4) (2.74) (1.65) (2.83)

#### expectations By Alan Cane Vodafone, the world's fifth largest mobile phone operator, announced a 28 per cent rise in pre-tax profits to £475.1m (\$722m) in the year to March

31, exceeding City expectations of £430-£470m and confirming its return to growth after a disappointing performance the year before. The shares rose 4%p to 254%p. 455m The results indicate that

Vodafone, has tackled the problams of fraud, bad debt and "churn" - the proportion of subscribers who fail to renew contracts - which held back profitability in the UK last year while investments abroad have either moved, or are moving, into profit.

Global turnover rose 22 per cent to £1.40bn. Profits before tax in the UK were £492.8m, compared with £399.5m, on a turnover of £1.24bn. up from £1.08bn. in continental Europe, the group fell into a loss of £1.4m, from a profit of £2.2m, on turnover of £75.7m, up from

£47.8m. in the rest of the world it reduced losses to £18.4m against £44m on turnover of

E83.6m (£24.2m).
Of its overseas licences,
Pacific Link in Hong Kong. Panafon in Greece. Vodacom in South Africa, Telecell in Malta and Vodofone SA in France were already profitable and the overseas portfolio was expec-

ted to turn in profits this year. Sir Gerald Whent, group chief executive, believed the best overseas licences had been issued and said group strategy was to increase its holdings in its overseas operations. Less than half the overseas portfolio was consolidated at present. therefore profits growth would accelerate markedly on consol-

idation Vodafone's prospects bave been enhanced by its success in tackling churn. At its worst last year it was experiencing churn of more than 28 per cent; now it is down to 25.6 per cent. The group also seems to be having success in attracting new subscribers.

2.96

Total last

2.6 3.9

1.53

1.65

Correspondend

#### Natl Grid allays regulatory fears

By Simon Holberton

National Grid Gronp, the privatised operator and owner of the high voltage electricity grid in England and Wales. yesterday sought to allay investor fears about its impending regulatory review by claiming that comparisons with Transco, the British Gas overdone

It also sooght to reassure investors about Energis, its telecommunications subsidlary, which incurred deeper losses of £72.8m and may lose another £50m this year.

Mr David Jones, group chief executive, said there was no reason to expect Offer, the industry regulator, to impose an onerous review. "We are looking for a bal-

anced review, one that leaves the company with a proper

incentive to drive the business forward," be said.
"We have brought controllable costs down by 40 per cent since 1990," he said. This is the hest performance of any part of the regulated electric-

ity sector.
Mr Jones also held out the prospect of a turnround in the fortunes of Energis, which should become cash positive

He said the break-even turnover was between £350m and £450m, depending on business The Grid reported a 1 per

cent rise in pre-tax profits to 2616.5m in the year to March 31, on turnover up 4 per cent at £1.49bn. Excluding Pumped Storage, sold last year to Mission Energy of the US, operating profits were up 8.7 per cent to £656.3m on turnover

up 8.8 per cent at £1.42bn. Gearing of 114 per cent should come down to around 80 per cent during the year. The company declared a final dividend of 6.16p which makes 10.27p for the year - up

8 per cent.
The shares closed down 2p at 181%p, compared with the 209p at which they stood in December.

#### Sales (Druj one in several trillion, but the after-tex profits of lot tery organiser Camelot owe little to luck. It has done a great job in setting up the system and marketing it. A 100 non-profit making organisa ... 80 tion would have had less nues and therefore cash for .. 40 the government. Moreover, the money paid out to good . 20 causes and to the government in tax is already the

a percentage of sales. With-oot the profit motive, the organisers would inevitably give suppliers of electronic systems or marketing services more generous contracts; so private sector profits would just be conveniently hidden.

Camelot made life difficult for itself by changing its accounting policy, which reduced 1994's profits, at the expense of increasing them last year. It has also resisted the temptation to shelter profits behind provisions. Nonetheless, its pre-tax profits were only a quarter of the commission it paid to retailers. And Camelot's 1 per cent after tax profit margin will shrink, since the proportion going to good causes and prize money increases over the life of the franchise.

Competitors, from betting shops to bingo halls, will hope that the furcre over corporate greed forces Camelot to take its eye off the ball. Scratch card sales are 60 per cent below their 1995 peak, and the UK's gaming industry is back on a recovery tack. However, Camelot's plan for a mid-week national draw could increase revenues by about £160m a year – and that will come out of other businesses' pockets.

# **Progress on Eurotunnel talks**

By Geoff Dyer

talks were raised yesterday by a statement from Mr Patrick Ponsolie, the Anglo-French group's co-chairman.

refinancing plan to be in place by the group's annual meeting on June 27. His upbeat comments were echoed by bankers involved in the negotiations. One said that

tunity" for achieving a settle-Hopes of a prompt settlement to Eurotunnel's refinancing an agreement might be terms would be less harsh for reached before then.

Both the banks and the company are expected to use the looming deadline to try and squeeze concessions out of the other side. Mr Ponsolle's comments

Eurotonnel shares, which have nearly doubled since the beginning of April Having risen 11%p on Monday, they closed the annual meeting was being 10p up at 115%p after the larg-viewed "as a window of oppor- est volume of trading in Paris payments on £8.1hn of debt.

in any day since September.

shareholders than had been feared. However, analysts said the rise in the share price was surprising as a refinancing would result in a dilution of existing shareholders. Any outline refinancing

approval of both the group's shareholders and all its 225 banks. Eurotunnel has been in talks with its banks since September after it halted interest

#### Instituto de Crédito Oficial

Sept 26 July 19 Oct 1 Aug 18 July 8 Sept 2 Aug 13 Aug 19

USD 450,000,000 Statutorily Guaranteed Floating Rate Notes due 1997

In accordance with the Terms and Conditions of the Notes, notice is hereby given that for the Interest Penad from June 05, 1996 to December 05, 1996 the Notes will carry an Interest Rate of 5.7765625 % per annum.

The Coupon Amount payable on the relevant Interest Payment Date, December 05, 1996 will be USD 293 64 per USD 10,000 principal amount of Note and USD 2,936.42 per USD 100,000 prin-

The Agent Bank Kredietbank S.A. Luxembourgeoise

To The Holders Of Banco Central de Costa Rica US \$66.611,115 Series A Interest Claims Bonds Due May 21, 2005 US \$76,435,529 Series B Bue May 21, 2005

NOTICE IS HEREBY GIVEN that the rate of interest from May 21, 1996 through and including August 20, 1996 is 6.326125% perannum, Interest coupons 1, 1 on August 21, 1996 win amount to \$647.79 per \$100,000 nominal face

First Trest of New York, N.A. as Fiscal Agent Dated: May 21, 1996

4.50%, Convertible Bonds due December 31, 2009 (the "Bonds")
of Samsung Heavy
Industries Co., Ltd. (the "Company") NOTICE IS HEREBY GIVEN to the holders of the Bonds that, pursuant to the provisions of the Indenture constituting the Boads, the conversion price of the Bonds has been adjusted from Won 25,053 to Won 24,394 per share. The new conversion price will be-The new conversion price will re-come effective retroactively to April 13, 1996. This adjustment has been made as a result of rights issue of the Company's shares. The Board of Directors' meeting of the Company approved such rights issue on February 21, 1996. SAMERIC HEAVY INDUSTRIES CO., LTD. May 28, 1996

Notice To the Holders of

THE OUTSTANDING \$50,000,000

Mr Ponsolle said that it was "not unrealistic" for an outline

prompted a further rise in agreement would need the

#### **PUBLIC NOTICES** LOWNDES QUEENSWAY PLC

DIRECTORS' PENSION SCHEME

Notice is given studer socious 27 of the Transice Act 1925 that the Scheme is so be wound up to the near fainte, Anyone who may be enotice to bushfits from the Scheme, whether as a member or afterware, and who has not aiready itema from the Transets should contact them at the add shows below not later than 5th August, 19%.

Lowndex Queezaway Pension Trustees Connect House Clarence Court Rushmore Publ

Advance Bank Australia US\$150,000,000

Floating Rate Notes 2006

The notes will bear interest at 6.28125% per annum for the interest period from 5 June 1996 to 5 September 1996. Interest payable value 5 September 1996 will amount to US\$160.52 per

Agent: Morgan Guaranty Trust Company

**JPMorgan** 



Hations

11.47

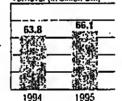


We have presented our first consolidated financial results. Since 1990, we have invested heavily in the network; created a new company structure as well as a focused marketing strategy.

the start.

#### Our financial results at a glance

Group turnover of Deutsche Telekom increased by 4 % to DM 66.1 billion JUS \$ 46.1 bn) compared to the previphone services and mobile telephor



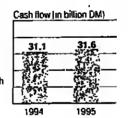
**Net** profit

The group's net profit increased last year by 50 % from DM 3.6 billion to DM 5.3 billion (US \$ 2.5 bn to US \$ 3.7 bn).



Strong cash flow We increased our operative cash flow

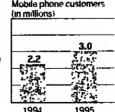
from DM 31.1 billion to 0M 31.6 billion IUS \$ 21.7 bn to US \$ 22.0 bn) compared to the previous year. All investments and the repayment of financial



With 40 million connections, we have the third largest telephone network in the world. And one of the most modern. Thanks to the increasing digitalisation of our local network and, of course, ISDN where we have more connections than anyone else in the world. With a market improved services, we are laying the foundations from which to tace domestic competition from 1998 priwards.

(in millions)	clions
-	2.95
1.84	20.00
3.3	12.7
39.2	
1994	1995

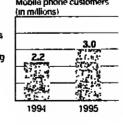
Mobile telephony In mobile telephony, the number of our customers increased last year by around 40% to more than 3 million. It's services that we have one of the leading



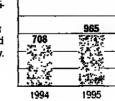
businesses in Europe.

Around one million customers used our T-Online service last year. With approvimately 20,000 new customers every month, we were able to make sure that T-Online significantly increased its lead as the biggest data service in Germany.

per exchange rate on 29-12-95.



T-Online customers



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Our connections move the world.

# Funding boost raises Cuban sugar hopes

Cuba has secured foreign financing for its 1996-97 sugar harvest in all 13 of the island's sugar-growing provinces and this is expected to lift its sugar production next season well above the 4.5m tonnes esti-

mated for this year.

Mr Alberto Betancourt, the head of Cuba's state sugar selling company, Cubazucar, said the prospects for further recovery in Cuba's sugar output in 1996-97, on top of this year's increase of more than 1m tonnes, would be boosted by the improved funding situa-

"Ws can definitely talk in terms of another increase," Mr Betancourt said. For the 1995-96 harvest, which is now in its final stages, credits to pay for essential cultivation and harvest inputs were obtained, mostly from European banks and companies, for nine of the island's 13 sugar growing provinces.

extended to all 13, Mr Betancourt said.

The positive impact of the foreign capital injection into Cuba's recession-hit sugar sector was visible in this year's harvest, which Cuban leaders are confident will reach the official target of 4.5m tonnes, a significant jump up from last year's disastrously low 8.3m

that sugar production so far this season had reached about 4.4m tonnes as of May 28 and while only a small group of sugar mills were still operating, enough cane was svailable to complete the 45m target by mid-June, if the weather remained reasonably

President Fidel Castro, has hailed this year's harvest as s success, adding that the island would aim to produce more than 5m tonnes in the coming season. Mr Betancourt said the planned etrategy was to lift

conference in Leipzig (June 17-23).

based on a survey of 154 countries.

new varieties of crops was the main

cause of the loss of plant genetic

resources. The new varieties have led to thousands of traditional vari-

eties of crops being discarded. Other

causes include over-grazing, legisla-

Precious Metals continued

GOLD COMEX (100 Troy oz.; \$/troy oz.)

Cuba's sugar output over the back to historical levels of at least 6m tonnes, and possibly higher, depending on economic

Mr Betancourt declined to give figures for the total foreign financing secured for 1996-97 but it was believed to be approaching \$200m. Senior officials had put the total credits obtained in 1995-96 for nine provinces at around \$130m and earlier this year, the Cuban government announced it was seeking \$60m of financing to cover the four remaining provinces. The Dutch ING Bank,

Britain's E.D. & F. Man Sugar, and the Anglo-Dutch group Vitol were among the institu-tions involved in funding the 1995-96 Cuban harvest. Sugar analysts said they understood these companies would continue to provide credits this year, along with others, such as Spain'e Banco Bilbao Vizcaya.

# Deal close on Zimbabwe platinum venture

production was expected in

December and initial platinum group metals and gold output was expected in March. All but

the platinum group metals would be processed at Hartley. The PMGs would go to Inco

and Johnson Matthey facilities

He said that Hartley's fore-

cast cash production cost per ounce of platinum was US\$220

the world. "South African plat-

inum metal producers,

in the UK.

By Kenneth Gooding, Mining Correspondent

A deal should be completed within six months to bring together the four platinum areas in Zimbabwe into a venture capable eventually of challenging the big South African platinum producers. Mr Peter Vanderspuy, chair-

man of Delta Gold, an Austrahan company with an interest in all four areas on Zimbabwe's Great Dyke - a long sinuous structure traversing the country - made this prediction yes terday.

He said putting only two of the projects together – Hartley and Mhondoro – would result within ten years in a complex capable of producing 750,000 troy ounces of platinum a year, equivalent to between 10 and 12 per cent of global output and matching the size of Impala, second largest of the South African producers.

Work under way at present will bring only the Hartley project into production. Broken Hill Proprietary, Australia's biggest company, is spending US\$264m on a mining complex capable of producing an annual



about 3 per cent of global supply. Hartley is also scheduled to produce 110,000 ounces of palladium, 11,500 ounces of rhodium, 23,000 cunces of gold, 8,200 tonnes of nickel, 2,300 tonnes of copper, 35 tonnes of cobalt and 6,400 tonnes of sodium sulphate.

Mr Vanderspuy said the Hartley project was at least three months ahead of schedule. Ore was being mined and stock-piled. Initial nickel and copper

Financial controversy threatens plan to protect plant diversity

accounting for 70 per cent of world platinum supply, have an average production cost of about \$320 an ounce," he pointed out.

Analysts suggested Hartley's low costs should protect it if Sonth African companies mounted an aggressive market-ing campaign as the Zimbabwe complex started up. They also said that consumers, particularly the big car companies that use platinum metals in anti-pollution catalysts, welcomed another source of the metal outside South Africa and

BHP owns 67 per cent and is operator of Hartley; Delta has the remaining 33 per cent. At tha nearby Mhondoro joint venture, BHP has 61 per cent and Delta the rest. Delts is sole owner of the other two areas,

Selous and Ngezi.
"It would be logical for BHP to acquire an interest in the other Delta properties," said one analyst. "BHP would prob-sbly be uncomfortable to have a competitor right next door, particularly s competitor that would make an easy takeover target for Anglo American [the

world's biggest platinum meteis producer) Mr Vanderspuy said negotia-

tions between BHP and Deita for a merger of all four areas were very complex because discussions involved many other issues. Among these was whether Delta should repay BHP its 33 per cent share of the \$264m capital cost of Hartley. If Delta did not repay, it would receive only 9.9 per cent of project cash flow whereas, if It repaid its share plus interest it would receive 33 per cent of the metals produced by Hartley. Financial modelling by Delta confirmed the desirability of repaying BHP, he

He beliaved that, using a mixture of equity funding and project-associated debt, it should be possible for Delta to repay BHP without having to raise new capital.

32 - 22 f

gir de l'est w

However, in two years time the partners would consider expanding Hartley and that might be the appropriate moment for Delta to go back to shareholders and possibly even to split its platinum and gold interests into separate organi-

#### MARKET REPORT

#### Copper weak

COPPER prices were unable to hold above the \$2,400 a tonne level in after hours "kerb" trading on the London Metal Exchange yesterday and slid back to register a weak chart close, although the market remained above early lows of

Other LME contracts generally followed copper's example, hitting lows during the morning session, rallying in the afternoon, and then ending off

Compiled from Reuters

(As at Thursday's tormes	Calculati	
Akuminkum	+4,153	to 964,925
Aluminium alloy	+280	to 86,420
Copper	+400	to 309,850
Land	+325	to 89,125
Nickel	+144	to 35,580
2)nç	-925	to 597,700
Tio	4726	to 0 bon

COMMODITIES PRICES

John Madeley reports on a UN Food and Agriculture strategy to halt 'large scale loss of plant genetic resources' n international plan to help the conservation and sus-

Lainable use of plants has ing cultivation. run into problems just weeks before it is to be discussed at a major UN The loss of plant diversity could make it harder for breeders who Food and Agriculture Organisation need a wide range of genetic material to develop crops that yield more The FAO says around three-quar-ters of the world's plant species have been lost this century, and warns that the "large scale loss of plant food, and resist pests and diseas "Plant genetic resources for food and agriculture provide the biological basis for world food security and genetic resources, vital for agriculsupport the livelihoods of every perture and food security, give reason son on earth," says the FAO. Agrifor major concern". The warning is cultural systems in all countries are "heavily dependent" on plants from Over 80 countries reported that the spread of modern, commercial agriculture and the introduction of

other countries, it points out. A draft "Global Plan of Action" to tackle the problems has been drawn np by the FAO's Commission on Plant Genetic Resources. The plan aims to promote the conservation of plant genetic resources and "better utilisation of the resources in order

to foster development and to reduce

GRAINS AND OIL SEEDS

tion and policy, agricultural hunger and poverty". A further aim changes, pests, civil strife, and shifting is "to promote a better sharing of the benefits derived". Farmers that have contributed plants that are used by breeders to develop improved crops, could, for example, be entitled to benefit.

1,300 genebanks throughout the world, and about "50 per cent of national collections are in need of regenerating", it says.

'Plant genetic resources for food and agriculture provide the biological basis for world food security and support the livelihoods of every person on earth'

The draft plan admits that most "attention, funds and sciantific expertise" have so far focussed on conservation of plant genetic resources in genebanks - refriger-ated store rooms - and that the importance of on - farm conserva-

tion was "scarcely appreciated and rarely considered". More than 6m

samples of plants are stored in over

Bnt there is controversy over funding. The plan would cost between \$130m and \$303m a year, for 10 years, to implement. This would be used to revive genebanks, encourage on-farm conservation, and promote better utilisation of plant

MEAT AND LIVESTOCK

■ LIVE CATTLE CME (40,000/bg; cents/fbs

59.350 +0.55 59.475 58.400 55.625 +0.6 55.700 54.750 50.450 +0.275 50.600 49.900 53.125 +0.325 53.200 52.500 78.775 +0.825 73.900 72.950

M. PORK BELLIES CME (40,000lbs; cents/lbs)

genetic resources - by increasing, for example, the genetic diversity that is available to breeders. A meeting of the FAO Commission on Genetic Resources for Food and Agriculture in late April was bogged down for three days on the matter of funds, with western countries saying that existing sources of funding should first be examined. Developing countries said they "deeply regretted" that the funding proposals were not

accepted. Two industry organisations, the International Association of Plant Breeders for the Protection of Plant Varieties, and the Green Industry Biotechnology Platform, issued a statement saying that the plan "provides a useful basis. . . to help conserve and sustainably use plant genetic resources for food and agri-culture" and that government resources would be required.

criticism from over 20 non-governmental organisations from five continents. At a recent meeting in Rome, the NGOs took the view that while a Global Plan was sorely needed, the draft gave too much priority to conservation in genebanks, and that that would "increase reliance on formal research institutions. . . further marginalising farmers' roles in the on-farm conservation and development of plant genetic resources".

In a joint statement, industrial organisations and NGOs said: "We believe that a strong and dynamic rolling, global, regional, national and community Plan of Action, based on values of true sustainability and driven by strong peasant participation is urgently needed. The Leipzig conference will test whether the 160 governments that are expected share the urgency.

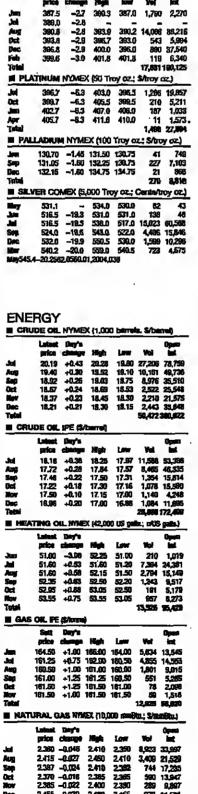
#### BASE METALS LONDON METAL EXCHANGE M ALUMINIUM, 99.7 PURITY & per tonic 1531.5-32.5

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Close	1285-95	1820-30
Previous National	1292-96	1330-33
High/low AM Official	1278-80	1337/1316 1316-18
Kerb close	4,836 •	1315-20
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Close	816-17	820-21
Previous High/low	811-12	916-17 822/812
AM Official	808-8	\$15-10 819-20
Kerb close Open int,	35.315	619-20
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Close	7920-30 7865-75	8035-40 7980-90
Previous High/low	7805-75 2777	8010/7675
AM Official	7770-75	7880-85
Kerb close Open int.	44,448	7995-8000
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PRECIOUS METALS III LONDON BULLION MARKET

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3 months	350.60	542.65
0 months	355.20	549,35
1 year	364,40	563,05
Gold Coins	S price	£ equiv.
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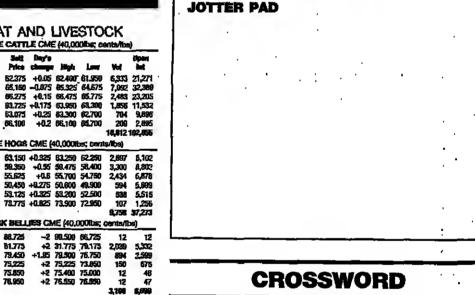
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21	+0.21			2,443	35,648	Amp	25.86	-0.16	26.25	25.86	3,779			3/6.9	-24	_		1 270	10 001
				50,472	380,672	Sep Oct	26.05 26.17	-0.17 -0.21	26.37 26.55	26.10 26.25	1,134		Aug Oct	340.9	-32	381.5 345.0	376.3 340.5	687	8,113
<u> </u>	IPE (\$	/berrel]				Dec	26.47	-0.14	26.80	26.45	6,319	22,178	Dec	331.A	-2.7	335.1	331.0	304	3,884
	Day's				Oppus .	Jim. Total	26.52	-0.17	26.80	26.65	83 16,492	1,795	Mar May	327.8 327.1	-1.5	330.3 326.5	327.6 327.0	147	3,769
_	change		LOW	Vol	int.		YABEAN	MEAL	CBT (1	OC tone		30,773	Aug	327.4	-1.3	328.5	326.0	20	591
72	+0.38	18.25 17.84		11,588	53,386 46,335	<u></u>	237.0	+2.8	238.4		18,878	28 895	Tetal						Z7,353
16	+0.22	17.50	17.31	1,354	15,514	Aug	237.1	+3.6	237.6	232.3	3,389		■ 8UQ/		_				_
22 50	+0.18	17.30 17.15		1,078 1,140	15,580 4,248	Step	234.8	+40	235.6	230.5	1,136	7,844	Jal Oct	11.42 10.75	-0.05	11,89 10,92	11.38		
16	+0.20			1,084		Oct	229.7 229.3	+2.7	231,0 230.5	227.0 225.3	599 7,200	3,852 21,695	No.	10.60	· =	10.68	10.73 10.57		
				25,888	172,408	Jen	229.5	+2.0		227.1	186	2,045	May	10.54	-0.15	10.60	10,53	275	9,740
O	LIMME	X (42,00	00 US gal	in; dus	galls.)	Total					24,583	87,978	Jai Oct		-6.14 -6.15	10,54 10,48	10.46	60 316	8,260 3,361
	Day's				Open		TATOES	LOE (E)	TONNO)				Total	14/41	-213			4,905 1	
	-3.06		LOW	<b>16</b>	1 000	Jan. Mor	110.0 82.5	-2.5	Ξ	-	_	-	■ COTT	ON NYC	E (50,0	OCIUS;			
)O	+0.53	51.60		210 7.364	1,019 24,381	Mar	110.0	_	_	Ξ	_	-	Jul			82.70			
10	+0.58	52.15	51.50	2,794	15,149	Apr	134.5	-12	139.5		57	1,153	Oct		+0.37		79.25	-	4,979
	+0.63	52.50 53.05	52.20 52.50		9,517 5,179	Total	145,0	+6,5	137.0	137.0	- 57	1 1,156	Dec Mar		-0.16 -6.16 .		78.40 79.35		5,542 5,262
	+0.75		53.05		6,273		10H7 (SI	FFEX)	CE IS1	Q/Index		4.50	May	80.03	-0.10	80.25	79.80	141	2,182
				13,326		May	1350	+1	1359	1355	31	538	Jisi( Total	80,57	+0.02	27.00	90.50	25. 1.790 I	982
PE	\$/pm	•				-	1290	+20	1295	1280	-46	800	T ORAN	GE JUN	E NY	Æ (15.0			
t	Day's				Open	Jul Oct	1250 1352	+20	1290 . 1355	1240 1350 ·	71	2,095		122.25	_				
	- 1 CC		Law	W	int	Jan	1352	Ξ	1355	1350	. 13 75	1.352	Sep .	120.25				383	4,872
8 5		166.00 162.00		5,834 4,855		Apr	1375	-	1320	1320	50	83	Nev	117,16	-0.10	116.00 1	17.60	50	1,627
		161,00		1,801		Total	Close	Proc			1,338	4,343	Jee Mar	115,60 117,15				77 12	3,834 265
		161.25		551		8F1	1336						May	118.78			20.00	_	150
		161.50 161.50		78 59	2,098 1,518								Total					J.866 2	1,300
				12,925															
G.	as ny	NEX (10)	000	w.; s/w	militu.)	gm.e	ES DATA												
ĸ.	Day's				Open		res dete		d by C	MS.									
	change	High	LOW	Wol	=				-										
		2410		8,923				_											
	0.027	2.450	2410	3,409		Mino	r Metnie					- 1							
	-0,024 -0.016	2.410 2.385	2362 2365		17,235 13,947	Europ	cent free	merke	s. ton	Metal	Bulleti	n. s	WOX 150	E DAT					1
5 -	0.022	2.400	2.390	289	9,897	per l	biqwam waak'sin	وويبحاذ	, unies:	s other	wise st	ated .	∫ Open i	mbare6t	and V	ciume	data :	ilione:	for
5 -	-0 (730	2.480	2455		11,581	Mom	99.6%,	3 per	KATAR. 2	2,950-3	1950). A 1975 12:1	950-	contrac	ts trade	d on	COME	( NYN	EX. C	:BT. ]
				15,106 1	<b>40.123</b>	8,100	), Ellemut	fe min.	99,999	Xi., tonn	e lots 3	1.20- I	CHEV IN	CME, C arregrs.	Voe.en	rd IPE (	arude (	A ere	one
	GASOI	INE				3.70	(3.25-3.)	75). C	admiu	ne min	. 99.9	5%,		By page			HI 4108	icst II	-003

E M	AIZE CE	T (5,000	bu mir	cental	56lb b	usheli	E C	OCOA (ICC	(SD)	R's/ton	160	Office	30,270
Jai	447.25	i –18.00	485.25	447.25	17,736	121,070	Jag 2			Price		Prov	. day
Sep	381.00	-7.00	388,00	370.00	5,234	67,501	Dully			. 1044.3	8	10	55.33
Dec	344.73	+3.00	346.00	332.50	818	157,980	- ~	-					
May	353.00	+2.75	355.00	344.00	322	3,605		UPPER UC	E (SAICE)	nej			-
Jul Total	351.75	+2.50	352.00	343.00	309 200 902	4,039	7	1805 1747 1722 1711 1686	-13	1750	1727	2.567	609 15,306
- B	ARLEY L	CE IS or	er tonne	a	Ouyana	SUC-PIU	Sep	1722	-15	1723	1703	1,846	7,515
Sep	105 26	-0.75	106.75	104 75		- 63	- Nov Jan	1711 1686	-10 -13	1714 1690	1695 1670	355	3,326 1,749
Mov	106.75	-0.90	108.75	106.75	33	879	Jan Mar Total	1659		1660		•	-100
Jan	108.00	-1.50	-	-	15	133	Total					4,791	28,934
Her Her	110.75	-3.25 -3.25	_	-	_	41	<b>=</b> 00	OFFEE 'C'	CSCE	37,500	DEC CON	(ts/lba)	
Total					9	913	Jul	113.40 112.45 110.70 110.25 109.25 OFFEE (ICX	+0.85	114.35	112.15	7,328	13,779
<b>S</b>	YABEAN	(S CET (	5,000br	mint; cont	m/60m) 8	ousbel)	Sep Dec	112.45	+0.80	113.50 111.60	111,50	2,397	7,976
	769.75	+4,25	772.00	756.50	23,850	57,879	Mar	110.25	+0.20	111.00	110.00	51	1,027
Ang	765,25	+3.75	78E.00	754.00	3,687	14,383	May	109.25	-0.80	110,25	109,25	21	335
Nov	733.50	+2.50	738.00	725.50	35,490	82,420	10.2	VEREE WY	W 4 15 .	-	www.	18,130	20,300
-	738.00	+1.00	744.00	732.50	714	6,924	= -	arres por	7 (00 1	- In-	- A	_	-
Total	745.00	+1.00	749.00	741,00	435 56.600	2,955 184,340	Comp.	daily		102.59		10	5.07
<b>S</b>	YABEAN	OIL C	ST (60,0	000lbe:	cents/il	b)	15 day	average -		108.58	ı	10	0.26
	25.58	-0.15	26.08	25.65	18,338	37.844							
Ä.,	25.86	-0.16	26.25	25.86	3,779	14,321	- 47	AIE SOC	WI LLE	(Sylicity)	<u>-1</u>		
Sep Oct	26.05	-0.17	26.37	26.10	1,134	6,677	Oct	3/6.9	-24	381.5	376.3 340.5	1,379	10,991 8 113
Dec	26.47	-0.14	28.80	26.45	6,319	22,178	Dec	331.4	-27	335.1	331.0	304	3,884
Jen Total	26.52	-0.17	26.80	26.65	83	1,795	Mar	327.8	-18	330.3	327.6	147	3,769
	YABEAN	MEAL	CET (1	· · · ·	70,462 . Show	<b>39,773</b>	Aug	327.4	-1.3	328.5	326.0	20	581
<u></u>	297.0		220 4	222.4	10 000	20 000	Tetul	378.9 340.9 331.4 327.8 327.1 327.4 (GAR 411)				2,464	27,353
Æ,	237.1	+3.6	237.5	232.3	3,389	12,095	<b>8</b> U	GAR 41'	CSCE (	112,000	bs; ce	nts/lbs	_
Sép	234.8	+4.0	235.6	230.5	1,136	7,844	Jal	11.42	-0.05	11,89	11.38	9,615	55,132
Oct Dec	229.7	+2.7	231.0	227.0	7.200	3,852	-	10.00	Ξ	10.68	10.73	1,526	30,205
	229.5	+2.0	229.8	227.1	186	2,045	May	10.54	-0.15	10.60	10,53	275	9,740
Total					<b>24,583</b>	87,978	Oct	10.47	-0.14 -0.15	10,54 10,48	10.46	316	3.381
	TATOES	LCSE (NO	TONNO)	_		—-	Get Total  II Co Jul Oct Dec Mar Hiny Jul Total	11.42 18.75 10.90 10.54 10.47 10.41		140-10	1	4,905 1	45,140
Jine. Marr	110.0 82.5	-2.5	Ξ	-	Ξ	=	<b>■ C</b> C	TTON NY	,,				
Mar	110.0	-	-	_	_	-	Jel	81,39	+1.07	82.70	80.40	3,591	22,417
Apr Mary	134.5 145.0	-1,5 +6,5	139.5 137.0	135.5	57	1,153	Dec	79.55 78.51	+0.37	80.25 79.65	79.25	1,068	4,979 28 542
Total	140,0		107.0	137.13	- 57	1,156	Mar	79.55 78.51 79.40	-0.16	80.00	79.35	285	5,262
<b>-</b> #	EIGHT (B	IFFEX)	CE S1	0/index	point		No.	80,03 80,57	-0.10	80.25	79.80	141	2,182
بطا	1359	+1	1369	1355	31	538	Total	114,00	TUUE	21.00	90.30	9.790	17,955
منظر اعدا	1290 1250	+20	1295	1280	46	900	E OR	ANGE JUR	CE NY	CE (15,0	)00lba;	cents/	ibe)
Det	1352	707	1355	1350	13	1.352	Jul	122,25	-0.65	123.10	122.20	1,141	10,536
معار	1352 1358	-	1360	1350	75	139	Sep	120.25	-0.65	121.20	120.15	383	4,872
ipr Total	1375	-	1320	1320	1,338	4343	Jag.	115.60	-0.30	116.20	117.69 115.70	77	3.834
	Close	Pres			,,		Mar	117,15	-0.35	117.50	117.50	12	265
R.	1336	1363					Total	80.03 80.57 122.25 120.25 117.16 115.60 117.15 118.78	-0.15	120.80	120.00	1 866 1	150 21.200
All fut	RES DAT	A supplie						_					
Purc per (lest mos \$,10 3.70 85-8 free 99.3 min. Moh 3.25 4.10 65% Vand	or Metale pour fer to in wa week's in yr 99.8% 0, Elema (3.25-3) 5 (105-1) market, 1 %, 24.9; %, 24.9;	e marke rehouse n bracke , 3 per : otte min. .75). C 110) cen 99.8%, 5-25.45 ; 5-25.45 ; 5-25.45	unies sts. who corne, ; . 99.99; scimius ts a p . 27.00-2 (25.80 r 76 ii ned me anture: geton uit (10iq ., cif. 3.	a other ere character character 7,950-3, %, torri m: min cund. ( 77.75 (2) 1-26.20) black kybisc c win sta g) WO, 05-3,15	eise s nged). 1075 (2, e lots ; 20 seise 7.50-20 . Merr . 180- xide, ; 1.5%, ; andard . 61, 50	Anti- 850- 9.20- 15%, MB 1.20; bury: 175, 1.15- 1.20- min, 2-62,	Open control NYC day are in NID	8A 2 B Futures 13 M	and \ed on SCE er Volumed mon ed mon	COME of IPE of a Option of the A /9/31=1 mont 1967=1 mont	Coude (com inte	VIEX, (O) are step to year 230	case otals
						- (	Jun		ey 81				200

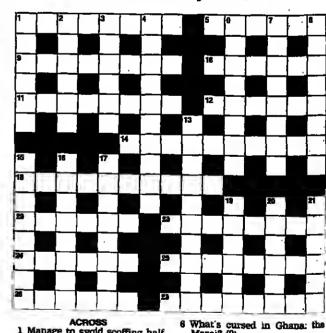
s.				
Metal Bulletin, 8 otherwise stated changed, Anti- 50-3,075 (2.850- torne lots 9.20- min, 99.95%, nd. Cobaite MB 75 (27.50-28.20); 6.20); Mercurye fisek, 180-175.	contracts NYCE, CM day in ser- are for all	rest and \ traded on te, CSCE er ters. Volum traded mon	-	MEX, CET.
KSC codde, 3.15- in 98.5%, 3.20- ic standard min.	Jun 4 2028.A ■ CRB Fut	Jun 6 2112.3	month ago 2118.4	year ago 2302,5
WO <sub>s.</sub> cil. 52-62. -3.15. Uranitan:	Jun 3			
	251,74	254.07	month ago N/A	year ago N/A
1		et (Base: 18		190
	Jun 9	May 21	modt and	355

## 79.450 +1.95   Fin 75,225 +2	75,225	79.175 76.750 73.850	12 2,039 894 150	2,599 675
	75.400 76.550	75.000 76.650	12 12 <b>3,198</b>	48 47 <b>2,690</b>
LONDON TRA		0		
M ALUMENTUM (99.7%) UME	Jun	Sep	Jun	Sep
1450	94 54 25	126 91 81	5 13 33	19 29 48
(Grade A) LME	Jun 146	Sep 126	Jun 15	Sep 53
2400 2500	77	74	46 99	99 163
1900	Jul 17	Sep 85	Jul 180	Sep 263
1950	18	73	218	301 340
E COCOA LCE	Jul 180	Sep 206	Jul	Sep 3
900	155	183	:	5
BRENT CRUDE IPE	_	Aug	Jul	Aug
1800	32 12	-	22	68
LONDON SPO	•		-	
E CRUDE OF FOR (pa		ARI		Si +or∼
Dubai Brent Blend (dated) Brent Blend (July)	318 \$18	02-7.11 46-8.4 10-8.1	8 +	0.095 0.205 0.185
W.T.J.  OIL PRODUCTS NW	\$20. Epromp	14-0.16 t delive	k +i y CIF (	1.280 (crane)
Premium: Gesoline Ges Oil		06-208 86-168		
Heavy Fuel Oil Naphtha		83-85 74-176		-8
Jet Suel Diesel E NATURAL GAS (Penc		90-191 66-167		-0.5 -3
Section (Jun) Petroleum Argus, Yel Londo	12.5	0-13.5	36 36	0.25
Gold (per troy ox)		90.75		0.70
Silver (per troy cz).	\$	8,50c 90.50 30.20	-	2.00 1.25
Palindium (per troy cz.) Copper	10	34,0c	1	0.80
Copper Lead (US prod.) Tin (Kusta Lumpur)	1: 4: 1	34,0c 5,00c 5,41r		
Copper Lead (US prod.) Tin (Kusta Lumpur) Tin (New York) Cattle (Ive weight)	1: 4: 1: 2: 9:	34,0c 5,00c 5,41r 59,50 9,60p		1.00
Copper Lead (US prod.) Tin (Kusta Lumpur) Tin (New York)	1: 4: 1: 2: 9:	34,0c 5,00c 5,41r 59,50		
Copper Lead (US prod.) Tin (Kusta Lumpur) Tin (Nama Lumpur) Tin (Nama Lumpur) Sheep (live weight) Sheep (live weight) Figs (live weight) Lon. day sugar (set) Lon. day sugar (set)	1: 44 1 2: 9: 14 11 \$3	34,0c 5,00c 5,41r 59,50 8,60p 8,87p		1.00 - - 7.2
Copper Lead (US prod.) The (Kusta Lumpur) Yin (New York) Castle (Ive weight) Sep (ive weight) Pigs (Ive weight) Lon. day sugar (raw)	1: 4: 1: 2: 9: 14: 11: \$:	34,0c 5,00c 5,41r 59,50 9,60p 8,67p 5,29p 296,9 394,5 Unq		1.00
Copper Lead (US prod.) The (Kusta Lumpur) The (New York) Cattle (New weight) Cattle (New weight) Pigs (New weight) Lon. day sugar (raw) Lon. day sugar (wte) Barley (Eng. feed) Maize (US No3 Yellow) Wheat (US Dark North)	1: 44 1 2: 9: 14 11 \$\$	34.0c 5.00c 5.41r 89.50 8.60p 8.60p 5.29p 295.9 394.5 Unq Unq		1.00 - - 7.2
Copper Lead (US prod.) Tin (Kusta Lumpur) Tin (New York) Cattle (the weight) Sheep (tive weight) Pigs (tive weight) Lon. day sugar (raw) Lon. day sugar (wtc) Barley (Eng. feed) Maize (US No3 Yellow) Wheat (US Dark North) Fubber (Lut) Fubber (Lut) Fubber (Lut)	1: 41 2: 9: 14 11 \$\$ \$\$ 10 10	34.0c 5.00c 5.41r 59.50 8.60p 8.67p 5.29p 295.9 394.5 Unq Unq 2.75p 2.75p		1.00 • • • • • • • • • • • • • • • • • •
Copper Lead (US prod.) Tin (Kusta Lumpur) Tin (Naw York) Cattle (Ive weight) Shep (Ive weight) Pless (Ive weight) Lon. day auger (raw) Lon. day auger (rete) Barley (Eng. feed) Whett (US No3 Yellow) Whett (US Dark North) Rubber (Jun) Rubber (Jun) Rubber (Jun) Rubber (Jun) Coconut Oil (Pla) S	1: 44 11 2: 9: 14 11 \$\$ \$\$ 10 10 37	34.0c 5.00c 5.41r 59.50 8.60p 8.67p 5.29p 295.9 394.5 Unq Unq Unq Unq 2.75p 2.75p 7.50m		1.00 • • • 7.2 2.5
Copper Lead (US prod.) Tin (Kusta Lumpur) Tin (New York) Cattle (the weight) Sheep (tive weight) Pigs (tive weight) Lon. day sugar (raw) Lon. day sugar (wto) Barley (Eng. feed) Maize (US No3 Yellow) Wheat (US Desk North) Fubber (Juli) Rubber (Juli) Rubber (Juli) Rubber (Juli) Palm Oil (Maisy.) S Copra (Phili) S	1: 44 1 1 2: 9: 14 11 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1:	34.0c 5.00c 5.41r 89.50 8.60p 8.67p 5.29p 226.9 394.5 Unq Unq 2.75p 2.75p 2.75p 7.50m 9.50v 9.50v 9.50v		1.00 - - - - - - - - - - - - - - - - - -
Copper Lead (US prod.) The (Kusta Lumpur) The (Kusta Lumpur) The (New York) Cattle (the weight) Sheep (the weight) Figs (thus weight) Lon. day sugar (raw) Lon. day sugar (raw) Barley (Chg. feed) Maize (US No3 Yellow) Wheat (US Dark North) Fulbber (Jun) Rubber (Jun) Rubber (Jun) Fulbber (Jun)	1: 44 1 12: 94 14 111 \$\$ 100 100 377 88 \$\$ \$\$	34.0c 5.00c 5.41r 89.50 8.60p 8.67p 5.29p 295.9 994.5 Unq Unq Unq 2.75p 2.75p 7.50m		1.00 • • • 7.2 2.5

ONDON TRA	ADE	D O	PTIC	SMC	
ke price \$ tonne	0	عال	P	m)	īī
LUMINIUM					L
7%) UME	Jun.	Sep	Jun	Sep	
O	. 94 54	126	5 13	18	9
0	25	81	33	48	ľ
COPPER de A) LME		Can		e e	_ T
0	Jun 146	Sep 126	Jun 15	Sep 53	<u> </u>
0	. 77	74	46	88	11
COFFEELCE	31	39	99	163	_ h
)	Jul 17	Sep 85	Jul 180	Sep 263	L
)	18	73	218	301	
OCOA LCE	. 14	62	267	340	16
OCOA UCE	Jul 180	206	Ju	Sep 3	
	155	183	:	5	18
	130	161	-	s	1
BRENT CRUDE IPE	Jul	Aug	Jul	Aug	1
	32	-	22	68	22
	12	:	•	-	-
NDON SPO	)T. Y	(ARI	KET	٠.	4
RUDE OIL FOB (pe				_	124
				+01-	1
ni t Bland (dated)	517. 319	02-7.1 48-8.4	1X +4	0.095 0.205	-
t Bland (July)	\$18	.10-8.1	2 +	3.185	26
L PRODUCTS NW	\$20.	14-0.10	<b>.</b>	200	-
ilum: Gasolina Oli		06-208 86-168		-3	1
y Fuel Oil	5	83-85			_
itha isel		74-176 90-191		-8	5
ATURAL GAS (Pen	\$1 \$1	90-191 86-187		-0.5 -3	9
	e/them	*			
on (Jun)					
ours Argus, Tel. Londs	12.5 10171	60-13.5 7 359 8	792	0.25	
THER	12.5 20171	50-13,5 7 359 87	7962	0.25	10
num Argon. Yel. Lond: THER (per troy ox)\$	# (0171  \$1	359 83 390.75	382	0.70	11
INER THER (per troy oz)\$	90171 90171 90171	359 83 390.75 38.50c	792	0.70 2.00	11 12
(per troy oz) (per troy oz) (per troy oz) (per troy oz)	\$1 (0171 \$2 \$3 \$3	359 83 390.75	7982	0.70	11 12
num Argus, Yel Londi THER (per troy ca) (per troy ca) (um (per troy ca) (um (per troy ca) (um (per troy ca)	\$1 \$2 \$3 \$3 \$3 \$1	359 83 390.75 38.50c 390.50 130.20 34.0c	7982	0.70 2.00 1.25	11 12 14
num Argus. Yel. Londs THER  (per troy ca)  (per troy ca)  (un (per troy ca)  Sum (per troy ca)  er  (US prod.)	\$1 \$2 \$3 \$3 \$1 4	359 83 390.75 38.50c 390.50 130.20 34.0c 5.00c	7982	0.70 2.00 1.25	11 12 14
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inum Agun. Tel. Londi THER (per troy cash um (per troy cash um (per troy cas) er (US prod.) (unita iumpur) Valva York) (the weight)	\$1 (0171) \$2 \$3 \$3 \$1 11 4 4 12 9	359 83 360.75 36.50c 190.50 130.20 34.0c 5.00c 5.41r 89.50 9.60p	7962	0.70 2.00 1.25	11 12 14 18 22
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No.9,086 Set by BATS



ACROSS
Manage to svoid scoffing half
of loaf (a meaty slice) (8)
Bleat about Indian bread fruit

Might one be upset by this hallucinogenic message? (44)
Just advocates cathedral (6)
Right then physical transitions

Of good omen, but doubtful if leader's replaced (10)
Sic missnelt /s area (6)
Sic missnelt /s area (7)

Vastry

Off (8)

Value wants insects seen

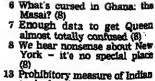
19 Disconcert the conductor (6)
Bird on either side of the field? (6)

21 Onisate Sic misspelt (a nervous problem), a nervous problem (8)

Direction that is of the greatest latitude (6) Drunk after strain becomes impenetrable (8) Vociferated, seeing back line was in front (6) indirectly relating to the

DOWN Sign removed from flag - flag Sign removed from tiag - 18g complete (8) Student gripped by something easy gets the grip (8) You and I helpless shout

those most depressed (6) Left to selectively kill, is on copper's tail (10)



tonic, laced (10)

15 A sign of reduction in fare to Fight, then plunder traveller s
bag (8)

Bird with symptom of bronchitis put in hospital (6)

Measure of bias evident in
election involving Mr Nasty

To be carried out (4-4)

16 Harry holds pea plant (8)

17 Landlord wants insects seen
off (8)

19 Disconcert the conductor (6)

and blue (6)

Solution 9,085



im ventus

# WE'RE PERFORMING BRILLIANTLY ON GRASS AND TARTAN.

# AND JUST AS WELL ON PAPER.

The company that was to become Puma was born back in 1924.

It was launched by Rudolf Dassler and his brother into a sports market in its infancy. Known then as Dassler Schuhfabrik, the company split into

two in 1948 and the name Puma was coined.

For years, there was little competition and the brand thrived, enjoying

decades of market leadership. Business peaked in 1986, coinciding with a stock-market flotation. Although new products and new technologies were

consistently introduced, a rude awakening was in store in the shape of highly aggressive competition from Reebok and primarily Nike. Puma was quickly outpaced by its younger and fitter competitors.

Seven years in the wilderness lead to unsustainable iosses. It became obvious that a programme of refocusing and restructuring was not only necessary but vital to the future of the company.

Thus, phase one of the restructuring programme was introduced in 1993. It involved drastic cost reduction. The streamlining of the product range. The creation of profit centres. And the outsourcing of production. As well as a painful, but absolutely crucial, headcount reduction.

Phase two began in 1994. Basically, this was an internal re-engineering process. The entire company culture was modernised. Business processes were redesigned. Product costing was ciosely examined. And a streamlining of suppliers was undertaken.

Phase three followed in 1995. At its core was a renewed focus on product. A focus that accurately reflects the company's mission statement:

'to market excellent sports performance products that meet the needs and aspirations of today's consumers'

Allied to this was more stringent business management. A greater market and customer focus. A new product range. A global marketing strategy. Increased concentration on customer service. And tighter licensee control. These measures have lead to a welcome return to both growth and profit.

The impact of the restructuring has been widespread. Loss-making profit centres were reorganised or, in extreme cases, closed during phase one. in 1995, every one of the nine remaining profit centres did indeed make a profit.

Sales in the Puma Group and Worldwide (including licensees) have increased to DM413.6 million and OM1,128.9 million respectively. Margins, too, have improved markedly. Gross profits have risen from 29.9% of net sales to 37.4%. income from operations has jumped from -11% to +14.5% of group net sales. While net income has leapt from -17.6% in 1993 to +11.7% in 1995. Not surprisingly, the impact on earnings per share has been

enormous with an increase of 65.4% over the period '94-'95 alone.

**NET INCOME NET EARNINGS** (DM in millions) PER SHARE

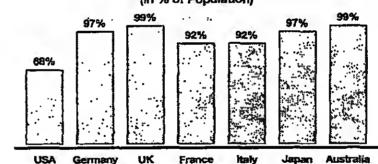
And so today the company finds itself, like its top endorsed stars, in good shape.

But what of the future? Well, the opportunity facing the company cannot be overstated.

The global sports market is simply vast. The sports footwear market alone now stands at approximately \$15bn per annum. Astonishingly, Puma's share of the worldwide market stands at just 4%.

The opportunity for growth for a sports company with the tradition and rich international heritage of Puma is there for all to see.

> BRAND AWARENESS IN KEY MARKETS" (in % of Population)



For, while market share in the US is minimal, brand awareness is surprisingly high. No less than 68% of the population profess recognition of the Puma brand. An impressive figure but noticeably less than the 90% brand recognition that Puma enjoys in many International markets. The widely contrasting figures attributed to market share and

and must not be missed. So just how can the company exploit this opportunity? What, in essence, are the tools for

success? Historically, Puma has been at the forefront of new technologies. Witness the introduction of the sole and shaft vulcanisation technology in the late '50s.

The development of Velcro fastening in the

'60s and the 'Trinomic' sports shoe mid-sole technology and Puma Disc system in the '80s and '90s. Only by constantly pushing for ' technologicai ieadership can Puma continually fulfil its mission statement. Hence the arrival of the latest technology. Puma Ceii. A lighter, more durable, performance based technology.

Other leading manufacturers

are also working

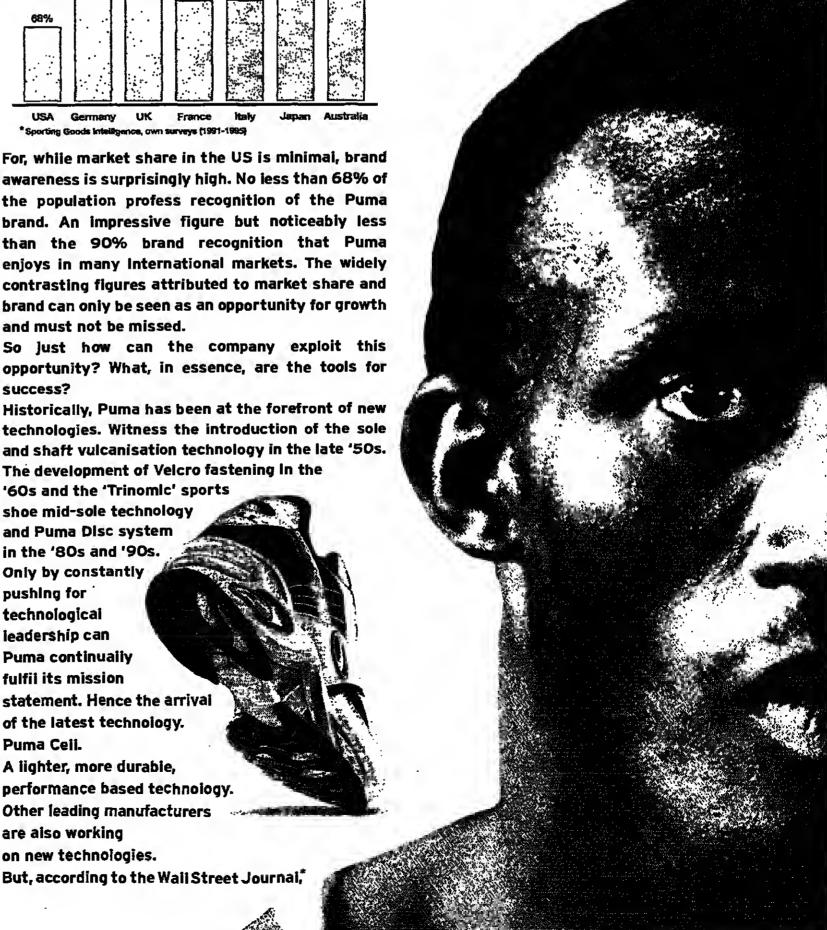
on new technologies. But, according to the Waii Street Journal," no less, Puma have once again got there first.

Staff Reporter of THE WALL STREET JOURNAL Puma AG has begun shipping a foamless athletic shoe, beating to market a host of bigger rivals with a technology on which the footwear industry plans its next generation of sneakers.

Of course, on the pitch, our endorsed stars

continue to shine. Diego Maradona and Lothar Matthaus have both lifted the World Cup. And they both wear Puma boots.

On the track Jonathan Edwards, Linford Christie, Heike Drechsler, Merlene Ottey and Colin Jackson all wear Puma. Between them they have won 39 Olympic and World Championship medals. No fewer than nine of which were gold. And we all know that gold is good for the bank balance. Very good, indeed.





ROSSWORD

#### INTERNATIONAL CAPITAL MARKETS

# Treasuries shrug off manufacturers' orders data

By Lisa Bransten in New York and Samer iskandar in London

The state of the second second

A stronger dollar and an easing of fears that the Federal Reserve might raisa interest rates next month helped US Treasury prices rise modestly. despite stronger than expected figures on manufacturers

The yield on the benchmark 30-year Treasury bond moved back below 7 per cent as the long bond gained 1 to 871. ylelding 6.971 per cent. The two-year note was å higher at 991, to yield 6.203 per cent, and the September 30-year Treasurv hand future up % to 107数.

The yield curve between the two-year note and the long bond steepened by two basis points to 77 basis points as the short end of the curve benefited from the comments of several Fed officials suggesting Most European bond mar-they were not alarmed by the kets were supported by the ralpace of economic growth.

Bonds also benefited from the dollar jumping to a 28month high against the yen and also rising against the D-Mark. In early trading the US currency was changing hands at Y109.26 and DM1.5334 compared with Y108.43 and DM1.5280 late on Monday. The market dipped briefly

after data from the Commerce Department showed a 0.1 per cent decline in manufacturers orders, while economists had forecast a 0.9 per cent decline. Mr Richard Gilhooly, an international bond strategist at Paribas Capital Markets in New York, attributed the market's ability to shrug off the strong orders figures to the

kets were supported by the ral-lying US market. Italian BTPs were once again the strongest performers. Liffe's September BTP future settled at 115.66, up 0.71. In the cash market, the 9¼ per cent BTP due 2006 gained 0.58 to close at 100.87.

#### GOVERNMENT BONDS

The yield spread over bunds narrowed by 3 basis points to 311 points. A fund manager at a continental European bank said he expected BTPs to continue outperforming bunds, although at a slower pace than in recent weeks. He believes the Bank of Italy has room for "substantial rate cuts". The curve steepening that

would accompany monetary

easing would favour short maturities in particular, said Ms Phyllis Reed at BZW, who sees "good value in the two-year area of the yield curve relative to five-year

■ French OATs also showed a solid performance, but under-performed bunds. Matif's June notional future closed at 123.42, up 0.20. In the cash market, the 10-year benchmark OAT closed 0.20 higher at 105.41, its yield spread over the equivalent bund returning into positive territory at 1 basis point.

Analysts remain cautious, however. Ms Phyllis Reed, European bond strategist at BZW, pointed to the June Pibor future's falling below the 96.0 level. She believes this was caused by fears over the currency's stability, which could

Borrower US DOLLARS

D-MARKS Kingdom of Sweden Sony Europe Finance

YEN L-Bank(b,a)\*

STERLING

GUILDERS

NPI Finance(c.i)

Groupe Danone

NCH FRANCS

CANADIAN DOLLARS

spill into the bond market. In the medium term, Ms Reed expects French 10-year yields to trade up to 20 basis points

■ German bonds ended higher, tracking the US market. Liffe's September bund future settled at 95.71, up 0.22 and the 10-year benchmark bond closed at 98.37, up 0.32. However, Ms Sharda Per-

saud, European economist at San Paolo Bank, warns of the possible escalation in the tension between employers and trade unions, which could weigh on the bond market. Although the release of first-

quarter GDP data is expected to confirm a recessionary environment, the figure is already discounted in the market and is unlikely, therefore, to affect prices significantly.

**NEW INTERNATIONAL BOND ISSUES** 

5.20

6.50

0.175R 0.375R 0.20R 0.125R

1.50

+23(1)

Jun 2004 0.35R

■ UK gilts were supported by a firm currency and rallying Treasuries. Liffe's September long gilt future settled at

1054, up is.
The benchmark 7½ per cent gilt due 2006 closed at 964, up A. Its yield spread over 10-year bunds narrowed by 3 basis points to 167.

■ The Spanish and Swedish markets benefited from their central banks' decision to cut repo rates by 25 and 20 basis points respectively to 7.25 and 6.30 per cent.

The Spanish June bono future closed at 98.99, up 0.56, and the 10-year benchmark bond rose by 0.45 to 97.64. In Sweden, the 6 per cent bond due 2005 rallied by 0.49 to 85.58, while six-month Treasury bill rates fell by 15 basis points to 5.97 per cent.

Deutsche MG/JP Mor ABN Amro HG/Bear

Banque Nationale de Paris

# Signs of pricing swinging back in favour of banks

By Antonia Sharpe

The bottom of the pricing cycle in the syndicated loans market has been predicted many times in the past 12 months, but that moment may finally have

Recent difficulties in syndicating high-profile deals such as Railtrack and National Grid have put banks on their guard.

#### SYNDICATED LOANS

They are committing smaller amounts to losn facilities than six or 12 months ago and are looking more rigorously at documentation. One experienced treasurer conceded yesterday that "pricing has gone back in favour of the banks".

However, the terms attached to some facilities currently in the market indicate that banks are still flush with liquidity. Two deals in particular are regarded by bankers as having "rock-bottom" pricing.
One is the DM1.5bn seven-

year facility for Mannesmann. the German engineering and telecoms group; which carries a margin of 13% basis points over libor.

The other is the \$500m fiveyear facility for BTR Dunlop Finance, a US subsidiary of BTR, the UK industrial manufacturing group which has a reputation for driving a hard bargain with its bankers. Although the margin on the loan is a tempting is over Libor, lenders will not earn any fees because of the facili-

ty's US-style structure. Such finely-priced transactions suggest that it may take some time for pricing to start edging upwards, but bankers are confident that the turn will come over the summer, particularly if more facilities run into difficulty. One that will be

closely monitored is the £500m loan for the about to be priva-tised British Energy, because many banks avoid lending to the nuclear energy industry.

The pricing on the four new credit facilities amounting to £4.5bn for Hanson, the UK conglomerate which is splitting into four groups, has also been seen as "erring on the gener-ous side", one banker said. Hanson's previous facility

had a margin over Libor of 12% basis points, but the margins on the four new facilities range from 15 to 35 basis points. The pricing reflects the varying credit quality of the four new companies and the size and complexity of the transaction. In acquisition financing, BZW and Chase have started to

sub-underwrite the £1.50m fiveyear facility which supports the bid by Southern Electric, the UK regional electricity company, for Southern Water. Bankers involved in the transaction, which carries a margin over Libor of 20 to 22% basis points, said up to 10 banks had been approached, but others said the number was closer

Royal Bank of Scotland and UBS have also begun to sub-underwrite a £1.5bn facility for Scottish Power, which is also bidding for Southern Water, to about 10 of Scottish Power's core banks. Pricing details

Royal Bank of Scotland is also providing loan finance of £150m to Johnston Press to help fund its acquisition of regional newspapers from Emap.

 Dresdner Bank Luxembourg is arranging a DM50m syndicated loan for Privredna Banka, the largest bank in Croatia, writes Gavin Gray in Zagreb. The government-guaranteed 18-month credit will pay a spread of 250 basis points over Libor.

Madium coupon yield — High coupon yield — Jun 4 Jun 3 Yr. ago Jun 4 Jun 3 Yr. ago

7,63 8,29 8,33

7,50 7,91 7,90

7,45 7,77 7,79

# **Pemex highlights compression** of emerging market spreads

large amount of bad news

already priced into the market.

The surge in emerging-market issuance continued yesterday, with \$300m of two-year bonds for Petroleos Mexicanos (Pemex) highlighting the compression of spreads for borrow-

ers in emerging markets. Pemex's bonds were priced to yield 190 basis points over US Treasuries, significantly less than the 375 basis point spread on Nafinsa's three-year issue in January and Pemex's recent two-year lira bond, which was priced at the equivalent of 295 basis points over

Poland's forthcoming DM250m five-year issue is set to confirm this trend further, amid market talk of a spread in the 60s over bunds. That is even tighter than the spread on Poland's dollar bond, which currently stands at around 75 basis points over Treasuries, after narrowing sharply from

185 basis points. The D-Mark issue is expected in late June via CS First Boston and Deutsche Morgan Grenfell.

In the reviving sterling sector, the National Provident Institution issued £100m of perpetual bonds callable after

#### INTERNATIONAL BONDS

10 years, making it only the second UK mutual life assurance company to issue an undated, subordinated step-up bond. The issue was priced to yield 140 basis points over gilts, attracting strong interest from UK institutions, including Pep funds, and sold out within hours, said SBC Warburg, joint book-runner with Dresdner

Kleinwort Benson. The Kingdom of Sweden launched a DM750m five-year deal which, at a spread of 29 considered by some to be tight. However, Deutsche Morgan Granfell reported good sales in Asia, including lead orders from joint book-runner Daiwa.

The dollar sector saw more short-dated, retail-targeted deals. Abbey National issued \$200m of two-year notes yielding 12% basis points over Treasuries, which saw such demand that the spread narrowed to 11 basis points. Lead manager SBC Warburg reported strong Swiss retail demand and also a firm bid from UK institutions seeking a yield pick-up over short Treasury products.

Bayerische Hypo issued \$200m of three-year paper, but dealers said its frequent appearances in the eurobond market recently - three alone so far this week - and its split credit rating might make this a

Elsewhere, Lebanon's Crédit

Bayerische Hypo(s) World Bank# NEW ZEALAND DOLLARS World Bank Final terms, non-callable unless stated. Yield spreed (over relevent government bond) at launch supplied by lead menager. \*\*Unitated. ‡ Floating-rate note. #Sami-enusel coupon. R: fixed re-offer price; fees shown at re-offer level. e) 3-mit Libor +614bp, b) Redemption in S. c) Cattable on 30/5/06 and every 5 yrs at par, if not called, new bonds are couponed at higher of current rate or 240bp over 5-yr gitts. e) Over Interpolated yield. f) Long 1st coupon. e) Short 1st coupon. Libanais plans to launch a three-year eurobond via Merrill Lynch, while Pakistan is to issue \$150m of 41/2-year float-

ing-rate notes via Citibank.

The New Zealand Debt Man-

agement Office said its buy-

back of three US dollar yankee issues and two sterling bonds was getting a good response. It said about 40 per cent of the £197.5m sterling issue had been repurchased and also reported

101.075

yankees. The bonds are being repurchased at spreads of between 10-35 basis points over corresponding UK gilts or US Treasuries. New Zealand is expected to have zero net forgood results on the \$500m of eign currency debt by 1997.

+7(7%96-69) Toronto Dominion Bank

WORLD BOND PRICES		
BENCHMARK GOVERNMENT BONDS	BUND FUTURES OPTIONS (LIFFE) DM250,000 points of 100%	FT-ACTUARIES FIXED INTEREST INDICES
Red Day's Week Month Coupon Date Price change Yield ago ago	Strike CALLS PUTS Price Jul Aug Sep Dec Jul Aug Sep Dec	Price indices Tue Day's Mon Accrued xd adj. — Low coopen yield — - UK Gilbs Jun 4 change % Jun 3 interest yid Jun 4 Jun 3 Yr, ago
Australia 10.000 02/06 107.0580 +0.274 8.92 8.81 8.78	9550 0.56 0.89 1.09 1.06 0.35 0.88 0.88 1.77	1 Up to 5 years (22) 121,29 0.16 121,09 2.20 4.26 5 yrs 7.49 7.56 7.49
Austria 8.125 02/06 97.8000 +0.200 6.43 6.41 6.36 Belgium 7,000 05/06 102.0700 +0.180 8.71 6.66 6.61	9600 0.30 0.63 0.82 0.84 0.59 0.92 1,11 2,05 9650 0.14 0.42 0.60 0.67 0.93 1,21 1,39 2,38	2 5-15 years (19) 144.56 0.39 144.01 1.55 5.64 15 yre 8.20 8.25 7.77 3 Over 15 years (6) 159.79 0.47 159.04 2.37 5.65 20 yrs 8.28 8.32 7.78
Carneda 8750 12/05 107/4900 +0,480 7.83 7.54 7.75 Dentmark 8,000 03/08 103/8800 +0,400 7.45 7.37 7.22	Est. vol. total, Calls 8986 Pusi 16336. Previous day's open Int., Calls 114439 Pusi 115482	4 Irradosmobles (6) 191.51 0.37 180.84 1.38 8.12 Irred.† 8.31 8.34 7.85
France BTAN 5.750 03/01 100.8700 +0.120 5.51 5.50 5.58	Italy	. 5 All stocks (56) 140.52 0.32 140.06 1.96 5.18 —— Author 6% ——
OAT 7.250 04/06 105.4100 +0.200 6.49 6.45 6.43 Germany Bund 6.250 04/06 96.3700 +0.320 6.48 6.42 6.37	NOTIONAL ITALIAN GOVT. BOND (STP) FUTURES	Index-Enland Jun 3 Yr. a
Ireland 8,000 08/06 102,0500 +0,080 7,89 7,56 7,50 haly 9,500 02/06 100,8700 +0,580 9,38† 9,30 9,69	(LIFFE)* Lira 200m 100ths of 100%  Open Sett price Change High Low Est, vol Open int.	S Up to 5 years (1) 196.57 0.07 196.44 0.85 4.43 Up to 5 year 2.90 2.92 2.9 7 Over 6 years (11) 186.04 0.26 185.55 1.36 1.91 Over 5 yrs 3.83 5.85 3.3
Japan No 140 6.600 08/01 119,7724 +0,044 2.23 2.30 2.41 No 182 3,000 09/05 98,8877 -0,180 3.15 3.20 3.98	Jun 115.60 118.14 +0.59 118.16 115.60 10988 17622	S All stocks (12) 186.15 0.26 186.67 1.36 1.86
Netherlands 6,000 01/06 97/4000 +0,300 6.36 8.31 6.30	Sep 115.00 115.66 +0.71 115.87 115.00 43622 45402	Average grows indestigation yields are above; above, coupon Bends; Los; 0%-74%; Medium; 8%-10%%; High; 11% and over, † Flat yield, yid
Portugal 11.875 02/05 116,9800 +0.630 8.96 8.85 8.91 Spain 8.800 04/08 97.8400 +0,450 9.15 9.03 9.08	IN TIALIAN GOVT, BOND (BTP) FLITURES OPTIONS (LFFE) Lizzoom 100ths of 100%	
Sweden 8.000 02/05 85.5287 +0.488 8.41 8.41 8.24 UK Gilts 8.000 12/00 102-10 +7/32 7.38 7.39 7.33	Price Sep Dec Sep Dec	
7,500 12/06 96-07 +9/32 8,04 8,04 7,99 9,000 10/08 106-19 +10/32 8,14 8,16 8,10	11550 1.77 2.29 1.91 2.73 11600 1.52 2.07 1.86 3.01	FT FIXED INTEREST INDICES GILT EDGED ACTIVE
US Treesury 6.875 05/06 100-09 +9/32 6.83 2.65 6.59	11650 1.31 1.86 2.15 3.30	Jun 4 Jun 3 May 31 May 30 May 29 Yr ago High Low Jun :
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London closing, "New York mid-day Yielde: Local market standard." 7 Gross (hotsoling withholding tax at 12.5 per cent psychia by normaldents)	- Politic	for 1998, Government Securities high eince compilation; 127.4 (PARTASS), low 49.18 (GS/CV75). Fixed interest high eince compilation; 133.87 (21, 15/10/26 and Rend Interest 1928. SE activity indices retreed 1974
Prices: US, UK in 32nds, others in decimal Source: MAS international		
US INTEREST RATES	Open Sett price Change High Low Est. vol. Open Int. Jun 98.50 98.99 +0.48 99.00 98.46 64,308 60,162	FT/ISMA INTERNATIONAL BOND SERVICE
Latest Treesury Bills and Bond Yorks	Sep 96.00 96.34 +0.58 98.38 96.00 2,705 8,244	
One month	● NOTIONAL UK GELT PUTURES (LIFFE) 250,000 32nds of 100%	Used are the latest interrestored bonds for which there is an adequate secondary merket, Latest prices at 7:10 pm on June 4 terest. Bid. Offer Chg. Yield. Issued Bid. Offer Chg. Yield.
Fed. Sunds 5.4 Stx preeds 5.41 10-year 8.84	Open Sett price Change High Low Est. vol Open int.	U.S. DOLLAR STRAKENTS Sweden 8 97 2500 105% 105% 3,83 Abbe
Foot.funda at Intervention One your	Jun 106-06 106-16 +0-10 106-16 106-02 27115 52830	Abbey Ned Treasury 6/2 03 1000 96/4 96/2 +1e 7:20 United Kingdom 7/e 87 5500 104/2 104/4 3.74 Exter
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For the Part ? ?

Section 1

3.8

#### **CURRENCIES AND MONEY**

#### MARKETS REPORT

# Dollar reaches 28 month high against yen

Renewed concern about the stability of the Japanese financial system yesterday helped the dollar rally to a 28 month

high against the Japanese yen. The collapse of a Japanese mortgage lender, the eight such institution to collapse in 18 months, dampened recent speculation of a possible tightening of monetary policy, which had lent some strength

Speculation that the Tankan survey of business conditions. due for release later this week, would be weak also bolstered this view that monetary policy is likely to stay on hold.

The dollar finished in London at Y109.025, from Y108.285. Against the D-Mark it finished at DM1.5318 from DM1.5265. The yen was also weaker against the D-Mark, finishing at Y71.15, from Y70.87.

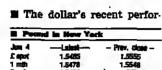
In Europe the focus was on Spain, where the central bank caught the market off guard by

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cutting the key money rate to 7.25 per cent from 7.5 per cent.
Less surprising was the decision by the Swedish Riksbank to cut the repo rate to 6.3 per cent, from 6.5 per cent, the twelfth cut this year.

Sterling maintained its firm showing of recent days, with the trade weighted index closing at 86.5 from 86.3. It was little changed against the dollar at \$1.5499, from \$1.5498, but gained nearly a pfennig against the D-Mark to finish at DM2.3741, from DM2.365.

The trade weighted index is still around 15 per cent below sterling's nominal exit level from the ERM in September 1992 and about nine per cent below in real terms.

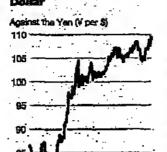


Hawkins, chief economist at the Bank of America in London, said: "There is a growing suspicion that most of the bad news is out of the way now for Germany." The dollar has also been helped by yen weakness, which is the product of rumours, emanating in Japan,

suggesting that the Tankan survey will be weak. "The market's view is that it will be sufficiently soft that no rate hike will be necessary in the foreseeable future," said Mr Hawkins

Even if the dollar's rally has been less than dramatic in recent weeks and months, it has come a long way: about 35 per cent against the yen and 14 per cent against the D-Mark from last year's lows.

Not everyone, however, believes the dollar's prospects are better against the yen than the D-Mark. Indeed, economists at Chase in London hold the



contrary view. They argue that dollar/yen is likely to range trade owing to shifting expectations about the path of Japa-

nese interest rates. They have, however, raised their German forecast to DM1.60, citing EMU pressures on the D-Mark and the prospect of German fiscal consoli-dation forcing widespread strikes during the summer.

ahead of expectations and was taken by the market as clear evidence that the Bank of Spain is actively trying to weaken the peseta, something senior officials have recently been trying to achieve through

verbal intervention. Support for this view lies in the fact that the central bank has chosen to cut rates before the release of the May inflation figures, despite disappointing data in April.

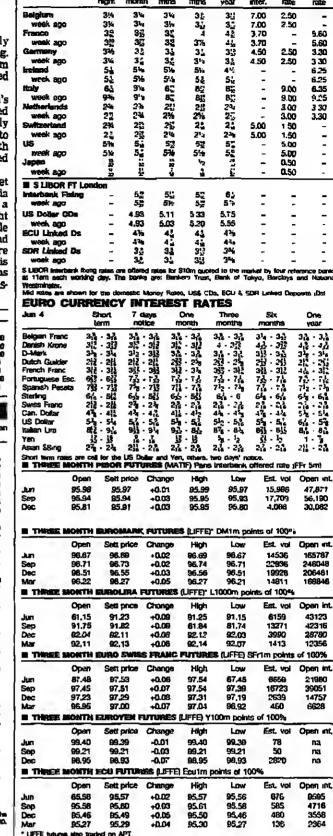
Perhaps of more consequence in Europe were developments in Scandinavia where the Finnish markka and Swedish crown both rellied on renewed talk about early entry into the ERM. The catalyst for this was legislative initiative in Finland to allow such a move to take place. "People are clearly speculating on the pos-sibility of an early move into the ERM on the part of both

currencies. This had a knock oo effect to the Italian lira, despite some disappointing data recently about government borrowing. The lira finished at L1,009 from L1,011, while the krona closed at SKr4.372, from SKr4.397.

Mr Eric Asbrink, Sweden's new finance minister, denied speculation that Sweden, Italy and Finland were planning to hold talks later this month aimed at planning a combined eotry into the ERM.

Mr Robin Aspinall, market strategist at National Australia bank in London said such a "co-ordinated act of Maastricht masochism" was only possible because the dollar's rally had taken pressure off oon-core currencies. "But the dollar is now peaking...which means that this threatens to be a clas-

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**Futures Traders:** 

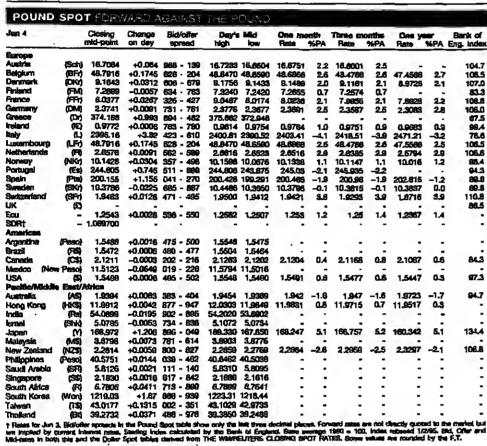
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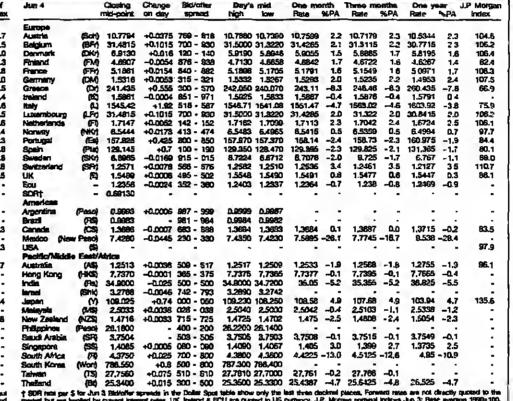
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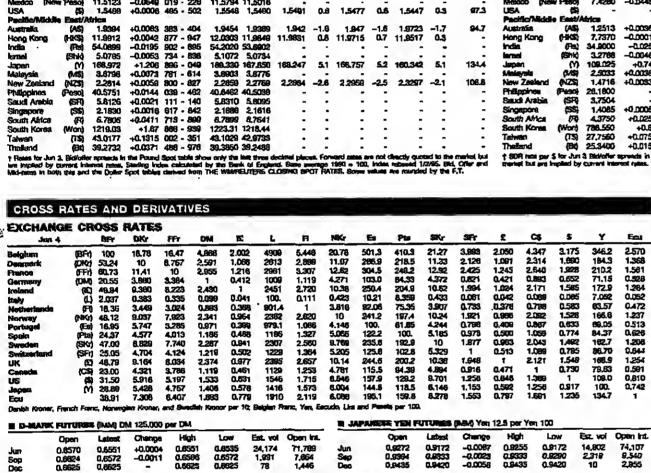
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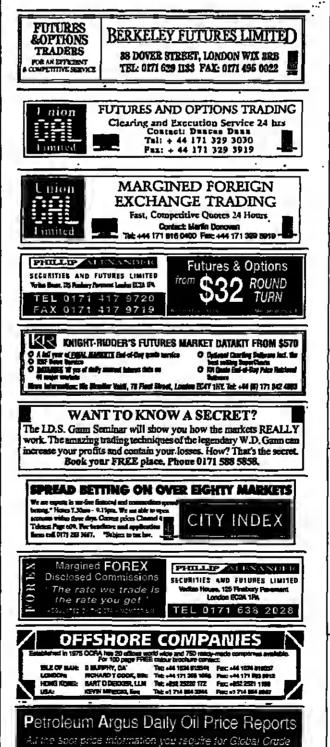
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Dec	0.8148	0.8100	-	0.9148	0.8100	14	855
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Certs of To Certs of To Ave. tender May 31, 19 rate for peri	ex clap. (£10 r dep. under 5 rate of clacos 95. Agreed rei Jun 1 1996	0,000j 1700.000 is 21 unt on May 31 is for paned J 96 to May 31.	2½ moreth 2½ 2pc. Deposit 5, 5,8344pc. 1996. Scher	1-3 morth 5 <sup>3</sup> 2 withdrawn SCGD fixed a to Jul 23, 19 nos IV & V &	3-6 months 5 for cosh 11-p ate 34g. Exp 86, Schemes 104pc. Finan	months 5 c. ort Finance. 3 E & III 7.35pc	Allo up de Referencies Ruiss
Certs of To Certs of To Ave. tender May 31, 19 rate for peri	ex clap. (£10 r dep. under 5 rate of discor 95. Agreed rei od May 1, 196 Liun 1, 1966 K SRORTTH 5	0,000j 1100.000 in 21 and on May 31 in for penod 96 to May 31, 57224.000	Up to 1 moren 2 <sup>7</sup> 2 2gc. Deposit 5, 5,8344pc. ( lon 28, 1996, 1996, Scher FUTURES	1-3 morth 5 <sup>3</sup> 2 withdrawn SCGD fixed a to Jul 23, 19 nos IV & V &	3-6 months 5 for cosh 11-p ate 34g. Exp 86, Schemes 104pc. Finan	months 5 c. ort Finance. 3 E & III 7.35pc	Months 44 Asia up de Paterenc se Pate
Certs of To Certs of To Ava. tender May 31, 19 rate for part 6.5pc from In Theresi	ex dep. (C10 t dep. under 5 rate of disco 95. Agreed re od Aley 1, 16 Jun 1, 1965 E SRORTH 5	IO,0007 TYDO.000 in 2° Int on May 31 in for pencel. 56 to May 31. STEIRS INICE	Up to 1 month 2 <sup>1</sup> / <sub>2</sub> 2pc. Deposit 5, 5,8344pc. i lan 28, 1996 7996. Scher FUTURES Change	1-3 month 5) <sub>2</sub> withdrawn SCGD fixed a to Jul 23, 19 mas IV 6 V 6	3-6 months 5 for cosh 11-sp ste Stg. Exp st, Schemas 104pc. Finan 60,000 pol/	months 5 to, ort Finance, a E & III 7.35pc ce House Be	Months  43  Asia up de Reterence se Rate  Open in 63883
Certs of To Certs of To Ava. tender May 31, 19 rate for part 6.5pc from In Thirties	ier dap. (C10 r dap. under 1 rate of disco 96. Agreed 1, 16 der 1, 1966 is accepted 3 Open 93.92	0,000j crou.coo in 2° unt on Alay 31, se ter pened . se te May 31, sett price 83,84	Up to 1 month 2 <sup>1</sup> / <sub>2</sub> 2pc. Deposit 5.8344pc. 6 to 28, 1996. Scher FUTURES Change +0.03	1-3 month 5 <sup>3</sup> 2 a withdrawn SCGD fined a to Jul 23, 19 mas IV & V & (LIFFE) C5 High	3-6 months 5 for cosh 1 kp site 9tip. Exp etc. Schemas 104pc. Finan 60,000 poir Low	months 5 c. art Finance. Is a 87 7.95pc ce House Bu tts of 100% Est. vol 16158 27016	months  44  Asia up de Paterno se Rate  Open im 63563 71332
Certs of To Certs of To Ann. tender May 31, 198 6.5pc from In Theresi	iot clap. (\$10 to dep. under 5 rate of clacon 86. Agreed rei od Aley 1, 186 Lun 1, 1968 E BRONTH 5 Open 93.92 93.81	0,000j Fr00,000 in 21 part on May 31 in for pandd 96 to May 31. Sett price 93,94 93,88	Up to 1 month 2 <sup>1</sup> / <sub>2</sub> 2pc. Deposit 5, 5,8344pc. i lan 28, 1996 7996. Scher FUTURES Change	1-3 month 5 <sup>3</sup> 2 withdrawn SCGD fleed i to Jul 23, 19 mos IV 6 V 6 (LIFFE) £5 High 93,95	3-6 months 5 for cosh 1 <sup>3</sup> sp see 36g. Exp see, Schrimas 104pc, Finan 60,000 poin Low 93,81 93,81 93,59	months 5 c. art Finance. I a st 7.85pc ce House Butts of 100% Est. vol 16158 27016 25121	Months up de 2. Reterence Pales Open im 63883 71932 73224
Certs of To Certs of To Ava. tender May 31, 19 rate for part 6.5pc from In Thirties	ier dap. (C10 r dap. under 1 rate of disco 96. Agreed 1, 16 der 1, 1966 is accepted 3 Open 93.92	0,000j crou.coo in 2° unt on Alay 31, se ter pened . se te May 31, sett price 83,84	Up to 1 month 2 <sup>1</sup> / <sub>2</sub> 2pc. Deposit 5.8344pc. ( lon 28, 1996. Scher FETURES Change +0.03 +0.08	1-3 month 5-12 a withdrawn 5-CSD field is 10 Jul 22, 19 nes IV & V & (LIFFE) 25 High 93,95 93,88 93,88 93,88	3-6 months 5 tor cost 1 1-st ste 3dg. Exp et. Schemas 104pc. Finan 60,000 poir Low 93,92 93,81 93,59 93,29	months 5 c. ert Financa. I se in 7.85pc ca House Sa in 7.85pc ca in 7.85	Months up de Raterence Rate Open im 63883 71332 73224 49327
Certs of To Certs of To Ava. tender May 31, 19 rate for part 6.5pc from In Thirties Jun Sep Dec Mar	ex clap. (\$10 step. under 5 may of clacox self. Agreed rel od Micro. 1966. Agreed rel od Misy 1, 1966. E SRORTH 1 SOPEN S3.92 93.81 93.59	0,000j roccoo in 2 <sup>1</sup> un for pendd 56 to May 31, syttings Sett price 83,94 93,67	Up to 1 month 2 <sup>1</sup> / <sub>2</sub> spc. Deposit 1,5.8344pc. i tan 28, 1995 1996. Scher FETURES Change +0.03 +0.08 +0.09	1-3 month 51 <sub>2</sub> a withdrawn 8CGD Boot o to Jul 23, 19 nes IV 6 V 6 (LIFFE) C5 High 93,95 93,68	3-6 months 5 for cosh 1 <sup>3</sup> sp see 36g. Exp see, Schrimas 104pc, Finan 60,000 poin Low 93,81 93,81 93,59	months 5 c. art Finance. I a st 7.85pc ce House Butts of 100% Est. vol 16158 27016 25121	Months up de 2. Reterence Pales Open im 63883 71932 73224
Certs of Til Certs of Til Ann. tender May 31, 19 rate for part 6.5pc form: In Thirties Jun Sep Dec Mar	ox dep. (\$10 ox dep. urder \$10	0,000j Trico.000 in 2' Trico.000 in 2' In for pencel 56 to May 31. STERPL.000 Sett price 93,84 93,89 93,67 93,25 92,99	Up to 1 month 2/2 2/2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1-3 month 51 <sub>2</sub> a withdrawn 6CQD field a 10 Jul 23, 19 mas IV & V & (LIFFE) 25 High 93,95 93,88 93,88 93,88 93,36 93,01	3-6 months 5 tor cosh 1 las see 36g. Exp 86, Schemas 104pc. Finan 80,000 poin Low 93,92 93,81 93,29 93,29 93,29	months 5 c. ert Financa. I se in 7.85pc ca House Sa in 7.85pc ca in 7.85	Months up de Raterence Rate Open in 63883 71332 73224 49327
Certs of Till Certs of Till Ann. tender May 31, 19 Tatel for part 6.5pc from Thirties Jun Dec Mer Jun Also tended	ior clap. (C10) in day, under 5 rate of clicco 68. Agreed rei clic May 1, 192 Jun 1, 1986 K SROOTTH 33.92 93.81 93.59 92.93 on APT. All	D,000j Froudoo in 2' unt on May 3' in for penod. 96 to May 31. Sett price 93,84 93,89 93,67 93,25 92,99 Open internal	Up to 1 month 1 month 1, 5.8344pc. Deposit 1, 5.8344pc. Scher 1996. Scher 1996	1-3 month SCSD fixed in to Jul 23, 19 mes IV & V & (LEFFE) ES High 93,98 93,68 93,01 93,01 pressous de	3-6 months 5 for cosh 11-spate Stdy. Express etc. Schermas etc. Schermas	months 5 c. 5 E & ST 7.85pc ca House Ba 225 of 100% 16158 27016 25121 8848 4051	Months up de Raterence Rate Open im 63883 71332 73224 49327
Certs of Till Certs of Till Ann. tender May 31, 19 Tatel for part 6.5pc from Thirties Jun Dec Mer Jun Also tended	ox dep. (\$10 ox dep. urder \$10	CANODI CONTROLLO IN 21 CONTROLLO IN 21 CONTROLLO IN 21 CONTROLLO IN 22 CONTROL	Up to 1 month 22/2 tags: Deposit 4, 5,8344pc (br. 28, 1996, Scher 40,03 +0,09 +0,09 +0,11 (sgs. are for \$(UFFE) £	1-3 morth of the control of the cont	3-6 months 5 for cost 11-to 35	months 5  or Finance 1  E & B 7.359  con House 6  Est. vol 100%  Est. vol 16158  27016  25121  8849  4051	months 44, Asia up de 2. Reference R
Certs of Ti Certs of Ti Ana. tender May 31, 19 rate for pair 6.5pc from III Thirties Jun Sep Dec Mar Jun Alan tended III SHORT	ior clap. (C10) in day, under 5 rate of clicco 68. Agreed rei clic May 1, 192 Jun 1, 1986 K SROOTTH 33.92 93.81 93.59 92.93 on APT. All	CANODI CONTROLLO IN 21 CONTROLLO IN 21 CONTROLLO IN 21 CONTROLLO IN 22 CONTROL	Up to 1 month 22/2 type. Deposit 5, 1, 3,53/4/pc i tun 28, 1936. Scher FUTURES Change +0.03 +0.09 +0.09 +0.11 figs. Are for \$ (UFFE) £	1-3 month SCSD fixed in to Jul 23, 19 mes IV & V & (LEFFE) ES High 93,98 93,68 93,01 93,01 pressous de	3-6 months 5 tor count 11 are as 350. Exp	months 5  or Finance 1	Open in 63883 71322 73224 49327 38752
Ceits of To Certs of Te Ann. sender May 31, 19 Table to part 6.5pc from m THERES Jun Sep Dec Mar Jun Also traded	ex dap. (C10) or dap. under in the or discount of the control of t	O,000) TOULDO In 2: art on Alley 3 in for period . Set prices . Set prices . Say	Up to 1 month 22/2 type. Deposit 5, 1, 9,53/4/90 tim 28, 1996. Scher PUTURES Change +0.03 +0.09 +0.09 +0.11 (Sgs. are for \$ (LIFE) £	1-3 month 51 <sub>2</sub> a with drawn 203D Seed of to Jul 23, 19 mos IV & V 8 High 93,95 93,68 93,36 93,36 93,01 pressors de 500,600 pc	3-6 months 5 tor count 114p at 38g, Exp 66, Schemas 104pc, Finan 104pc, Finan 100,000 poin 103,59 93,29 93,81 83,59 93,29 93,91 bitts of 100 Jun 0.01	months 5  on Firence 1 is a si 7.350 con House Se is a si 7.350 con House S	Open in 638227 38782 Dec 0.29
Ceits of To Certs of Te fear, under May 31, 19 rate for pari 6.5pc from m Thirties Jun Sep Dec Dec Dec Mar Jun Also traded in Shion Strike Price	er dep. (C100 r dep. urder i me of disco. Se Agreed in Geo. Geo. Geo. Geo. Geo. Geo. Geo. Geo.	O,000) THOUSED IN 2: Unit the May 31 in for period to 56 to May 31. Sett price 93,84 93,87 93,25 92,99 Open Internal In OPTION	Up to 1 more 22/2 22/2 200 Deposits 1, 5,834/40 C for 28, 1996, Scher 40,03 + 0,06 + 0,09 + 0,00 + 0,11 (5gs. are for 29,000 + 0,000 +	1-3 morth of the control of the cont	3-6 months 5 months 60,000 point 104pc. Finance 60,000 point 103.59 93.29 93.29 92.93 77.	months 5  art Financa. I at a m 7.350 cc. House the set to 16158 27016 25121 4051  PLITS — 0.08 0.20	Miles up de Reference Rate Open im 63583 71332 73227 38762 Dec 0.29 0.44
Ceits of To Certs of Te Ann. sender May 31, 18 Prate for part 6.5pc from 6.5pc from 6.5p	ex dap. (C100 in dap. under in rate of discovery frame of discovery fr	O,000) THOUSED IN 2: Unit the May 3 in feet period to 16 to May 3 in feet period to 16 to May 3 in feet period to 16 to May 3 in feet period 23,84 sq. 29.99 Sq. 83,87 sq. 2,89 Open Internal to OPTIONS OR OPTIONS	Up to 1 month 2/2 type. Deposit 5, 5,8344pc. (s. 1, 5,844pc. (s. 1, 5,84	1-3 month of the control of the cont	3-6 months 5 tor count 11-us as Sig. Exp e	months 5  or Finance 1	Open in 63663 71332 73224 49227 38762 0.28 0.44 0.63

1375	0.20	0.22	0.21	0.01	0.20	0.44
9400	0.03	0.08	0.11	0.09	0.39	0.83
9425	0	0.02	0.05	0.31		
Est. vol. total	Colle S165 Puts	2425. Previo	ar don's open	in_ Calls 1	11650 Pulls 127	/.30
		ASE L	ENDING	RATES		
				76		
Adam & Co	% ompany 6.0   Bank	Exam	Bank Limited .	7.00	Royal Bk of Sco Singer & Frieds	ander 6.00
	6.0		a Gen Bank			1 58CS . 6.00
	bacher 6.0		Fleming & Co	500	98	6.00
Bonk of Ba	reds 6.0	O CHILDRE	es Mahon	6.00	Inited Bank of Inity Trust Ban	PER COU
	go Vizcaya 6.0	· Limber 6	myk AG Zuric	h.6.00	Veetern Trust .	6.00
	prus 6.0	- Links	ne Rork	6.00 u	Vinkeeway Laid	Em 6.00
	and 6.0	Heckab	la & Gen Inv B	8L 6.00	orishire Bank	6.00
	sa 6.0	STE STE	nucl	6.00		
	adend 6.0 ark 6.0	C Hoo	no & Co	6.00	Members of L	ondon
	<b>8</b> d East 6.0		ang & Sheerigh	ar ong	Investment Ba	arakting
	toy & Colled 6.0		lodge Bank	6.00	Association:	
	A6.0		Joseph & So	- 000 B	in administrati	pri n
	Bank 6.0		Bank	800		
	oragive Back 6.0		Back	- 600		
Cours & C	6.0		Check Corp	R.25		
Credit Lyon	mais 6.0		STATISTON	6.00		
	pular Bank _6.0		others	6.00		

Sep Dec	0,9394 0,9435	0.8333	-0.00		18333	0.9420	10	2,855
STEPLE	a PUTUE	es (pun	282,50					
Jun	1,5520	1,5502			1.5526	1.5494	22,470	70,538
Sep	1.5550	1.5508			1.5506	1.5478 1.5430	2,762	7,009
Dec	1,5430	1.5514	_		1.5014	1.5430	15	70
EMS EU	ROPE	AN C	URRE	NCY	UNT	T RATI	ES	
Jun 4	Ecu o	er.	Rete	Ch	enge	% +/- from		d Div.
	فرزوا	<b>ag</b> /	arrest Eccu	Off	CHA	ÇEN. FERR	A MESIG	st ind.
Spelit	162.4		81.712	-	0.648	-0.45	1.99	3
reland	0.7922		788625	-0.00	3782	-0.45	1.95	3
Netherlands	2,152	14	214572		0238	-0.30	1.80	2
Belghun	39.39	60 3	99.3793		0325	-0.04	1.54	0
Commit	1.910	07	.91580		0145	0.29	1.21	-3
Austria	13.43	23	13.4808 197.484		0113	0.87	1.16	-2 -8
Portugel France	195.7 6.406		3.48737		0312	1.27	0.23	-11
Connerk	7.285		.30509		0335	1.50	0.00	-10
NON ERM N			100		1.058	2.54	-1.30	
Greece	292,8		901.139 1934.55		2.55	-8.15	10.50	
UK UK	0.7966	52 0	8077B1	-000	4388	2.80	-1.07	-
Equipment of the control of the capture of the capt							tong relative of c. Overgence of ories and Ecu o ority's metal ( ed by the Finan d)	
	ELPHEA S		ALLS -	£31,25	O (centr	a per pourk	- PUTS	
Strike Price	Jun		July —	Auc		Jun	- FUI-5	Aug
1,490	6.27		-				0.07	0.11
1.500	5.27		5.29	-		-	0.11	0.25
1.510	4.27	,	1.38	4.5			0.18	0.37
1.520	3.28	:	3.47	3.77		-75	0.90	0.58
1,530 Provious day's	2.38		87	3.04		0.02	Q.45	0.85
R THREE					n <b>paint</b> High	Low	Est. vol	Open In
	Open	Lagest	Char	-Sa	•		37.268	350,701
Jun	94.45	94.46	-		94.47	94.45 94.20	64,929	386,B18
Sep	84.16	94,21	+0.0	·	93.85	93.82	136,971	398,770
Dec	93.81						100,011	000,110
E US TREA	-		Late (as	M4 210			7.04	4 222
Jun	94.92	94.92	-		94.92 94.65	94.91	351 740	6,939 5,402
Sep	94,67	94.69	+0.0		94.35	94.38	790	1,357
Dec	94.36	64.39		~	-	3430	13	1,57/
Al Open Intere	ARK OPT	ONE (U	FE) DM1	m poir	ts of 10	00%		
Strika		_	ALS -	P		No. Ji	PUTS -	
Price	Jun	Jul	Aug	Sep				
9650	0.20	0.25	0.27	0.27		0.0		0.04
9675	0.02	0.06	0.02	0.10		08 0.0 31 0.2		0.12
9790	0							
EAST, VOL. 1012.	CARS GOOD	THE PAS	TONS (L	FFE) S	Print	points of 10	579 Plas 39525 10%	
EURO SI	HES PRA	W OF I					· PUTS —	
EURO SI	HES PTA	C	ULS -					
EURO ST	Ans Pra	C		Dec		Jun	Sep	Dec
E EURO SI Strike Price	Jun 0.03	C.	Sep ,10	0.12		0.25	Sep 0.34	Dec 0.58
EURO SI Strike Price 9775 9900	Jun 0.03 0.01	C	10 .05	0.12		0.25 0.48	Sep 0.34 0.54	
ELIGINO ST Strike Price 9775 9800 Est. vol. total,	Jun 0.03 0.01	C	10 .05	0.12		0.25 0.48	Sep 0.34 0.54	0.58
EURO SI Strike Price 9775 9900	Jun 0.03 0.01 Cule 1006	C. 0 0 Puts & P.	Sep ,10 ,05 evicus de	0.12 0.06 yla oper	i brz., Ce	0.25 0.48 25 5545 Put	Sep 0.34 0.54	0.58
Strike Price 9775 9800 Est. vol. 1664,	Jun 0.03 0.01 Cule 1006	Pute a P	Sep ,10 ,05 evicus de	0.12 0.06 yla oper	int., Ca	0.25 0.48 25 5545 Put	Sep 0.34 0.54	0.58

1.22 1.00 0.81

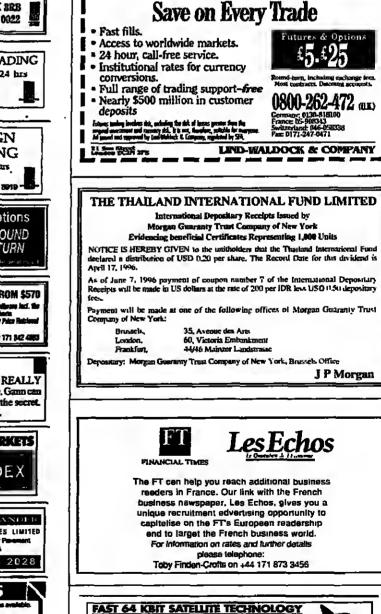
0.03 0.11 0.30

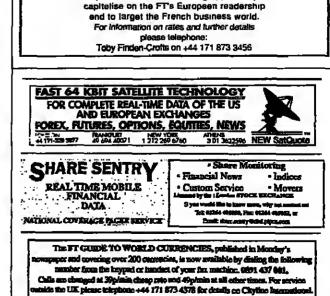


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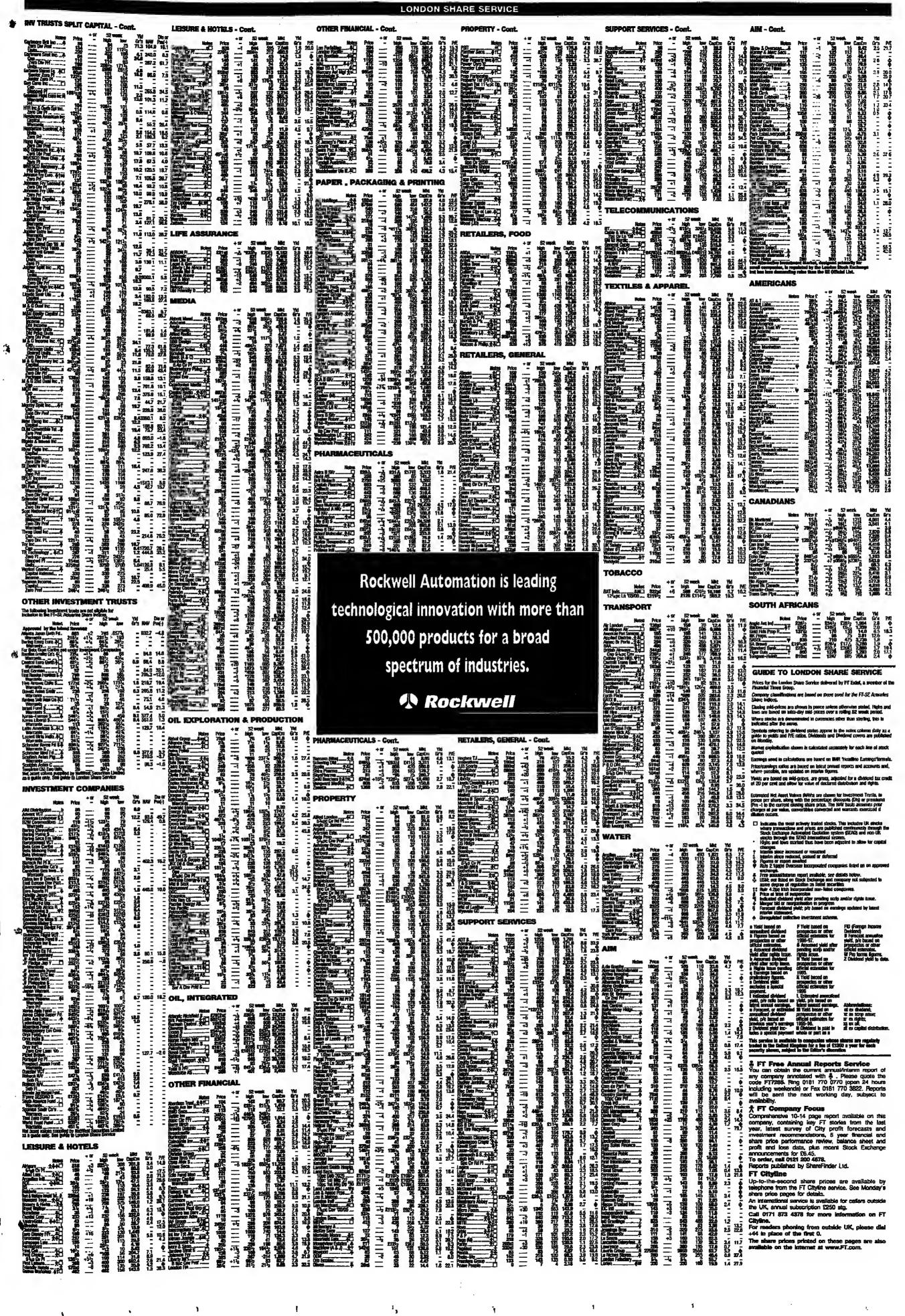
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#### LONDON STOCK EXCHANGE

# Bid hints help stocks close at session highs

By Steve Thompson, UK Stock Market Editor

A much more hullish mood was evident in London's stock market at the close yesterday. Dealers spoke of the potential for imminent corporate activity, possibly involving a counter-move on Lucas Industries by BBA, but there were plenty of other rumoured bid candidates, especially in the composite insur-

ance sector General Accident and GRE were being touted as strong takeover targets and there was another bid buzz, albeit a rather tired one, surrounding United Biscuits, after Cadof £800m by selling its controlling La Rue. Midland Independent News-stake in its bottling plant joint venture with Coca Cola.

The prospect of another burst of takeover activity, plus a much needed rally on Wall Street, helped the FT-SE 100 index recover from a mid-morning bout of uncertainty and close the session in good heart. The index was finally a net 16

points higher at 3,755.2. There was no such enthusiasm for the secondliners, bowever, The FT-SE Mid 250 index, burdened by a handful of profits warnings, retreated 13 points to 4,492.5. The warnings came from a wide range of areas, including specialist chemicals companies such as Inspec, and banknote printer De

casting lower than expected profits.

Helping to drive the market forward was a big two-way trading programme, weighted on the buy side and executed by Merrill Lynch during the early afternoon.

Earlier, the market had faltered after a relatively good start. Wall Street's Monday night slide, which saw the Dow Jones Industrial Average dip another 18 points, and the vield on the long bond top the 7 per cent mark, caused no real problems. The Footsie rose by more than 8

big institutions showed reluctance

points abortly after the opening, but quickly ran out of steam as the

Johnston Press, which made a

£111m rights issue to help pay

Eurotunnel continued to

race higher in heavy turnover,

topping the FT-SE Mid 250 per-formance charts for the second

day running. in epite of

what was seen in London as a elightly negative etate-

ment from the Channel tunnel

The group reiterated that the

end of June remains a target

date for a debt restructuring

deal. But that shareholders

"must not underestimate the

uncertainties which continue

and will continue to affect the

timetable or the substance of

80p at the beginning of May, surged to another new 1996

high, rising 10 to 115%p. The

Paris bourse was again the

The shares, which stood at

our negotiations".

for the deal and closed 4 higher

at 210p.

operator.

to push money into the market. Gilt prices crept higher at the outset and posted gains of around 6 ticks, before slipping back to level around hinchtime

The afternoon brought a strong turnaround for the market, however. The Merrill trading programme and the strong opening performance by Wall Street provided a shot in the arm for equities, which were additionally helped along by a firm US bond market. Shortly after Wall Street opened,

the Dow was up some 20 points, and showed a gain in excess of 40 points an hour after London closed. A senior marketmaker at one of

the big European securities houses

heaviest single-day volume

Public houses group Regent

Inns was in demand and the

shares forged ahead 30 to

1150p. Reports suggested an

agency cross at 1140p.
The announcement that

Swissair is prepared to make a £145m additional bid for

Aliders' duty free operations,

subject to support from 40 per cent of Allders shareholders,

came after the stock market

closed, but analysts expected

the Allders share price to rise

today on the news. Allders was

unchanged at 199p.
Moss Bros rose 142 to 1280p

as one or two marketmakers

860p, with continuing interest on the forthcoming Euro'96

tournament which has kept

the football season going for a

few more months. One analyst

who bought a shirt himself

yesterday, said they were "fly-

General Accident improved

10 to 673p as the latest in its

series of presentations to analysts continued to impress.

Vodafone, a weak market on

ing out of the shop".

JJB Sports jumped 42 to

were caught short of stock.

since September.

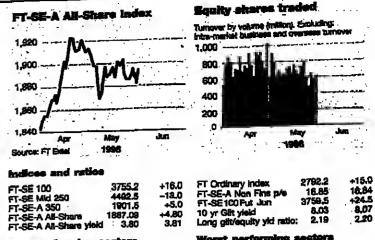
along by hig gains in many of the banks and insurances and on the prospects for more bids. "A lot of the big funds have been underweighting London over the

said the London market felt "explo-

sive" just before the close of trading, with the market being carried

past few sessions on the view that Wall Street is about to take a bath; but the reality is that the US has already had its correction and is due a rally," the marketmaker said.

Turnover in equities by the 6pm reading had reached 842.9m shares. with non FT-SE 100 stocks comprising 64 per cent of the total. Customer business on Monday was val-



FUTURES AND OPTIONS

II FT-SE 100 INDEX FUTURES (LIFFS) \$25 per full index point

#### Lucas deal talk hits BBA

Engineer BBA moved sharply lower as talk about a possible spoiling bid for Lucas Industries ran round the market. Most analysts took the story

with a sackful of salt. With a stock market capitalisation of £1.3bn, BBA is valued at £800m less than Lucas. which recently announced plans to merge with Varity, of the US. "The group could possibly run to a deal of up to 2500m with the aid of a rights issue, but an offer for Lucas makes neither financial or strategic sense," said one leading engineering analyst.

Yet BBA does have a stated ambition to grow by acquisi-tion. "It could well be up to something. The last big deal from BBA coincided with an analysts' trip to Switzerland. The company plans an analysts' visit to Sweden later this month," commented a trader. BBA shares, which have performed strongly relative to the market over the past 12 months, receded 11 to 317p. Lucas added 5 at 246p in solid looking volume of 7.9m.

#### Cadbury surges

The market spotlight was firmly fixed on food producer Cadbury Schweppes after the company said it is to sell its 51 per cent stake in CCSB to Coca-Cola Enterprises.

The sale, mooted some time ago but not expected this

month, drove the shares sharply ahead. They jumped 17 to 498p, making Cadbury the best performer in the Footsie. Turnover of 18m made it the day's second most active trade. Part of the move was attributed to the sale, though the

ssion also saw the return of bid speculation to the stock. Several analysts were sed by the move and said that the deal made sense in both the UK and US context

for Cadbury. However, Ms Sally Jones at Credit Lyonnais Laing was lukewarm on the deal and remains cautious on the stock. She said: "I thought this business was worth more, and all the other question marks, such as its relationship with Coca-Cola, remain." Coca-Cola remains a bottler to some of Cadbury's leading brands in

the US. United Biscnits. long rumoured as a possible target for Cadbury, rose 3 to 221p. However, one analyst said this was a knee-jerk reaction. He said Cadbury had made it clear that further acquisitions would be in the confectionery and

#### Profit warnings

London's lower tier indices were hit by a wave of profits warnings - particularly in the printing and publishing sector. Most damaging in terms of capitalisation was an announcement from De La

Rue, the banknote printer. The company reported a flat profit of £147.9m for the year to March and warned that low banknote prices and difficult trading in the cash systems division were continuing. It

CHASE

said interim profits would be lower than last year. Brokers downgraded fore-

casts. Credit Lyonnais Laing provisionally cut its full-year estimate to between £140m and £145m from £152m previously. De La Rue fell 65 to 656p.

Inspec, the specialist chemical manufacturer, tumbled 59 to 284p after the group announced that trading for this year would be below current market expectations with mixed performances from its businesses so far.

Finally, a profits warning knocked Midland Independent Newspapers by 24 to 123p. The company also said it had pulled out of buying several titles owned by Emap.

Emap, which repeated com-ments from the annual general meeting that it had "experienced a slow start to the year", retreated 27 to 675p. It said that the newspapers in question main centre of activity, with were being sold for £211m to nearly 15.5m shares traded, the

fixed at 8,609375 % P.A.

fixed at 9.84375 % P.A.

Next payment date : September 02, 1996 Coupon nr : 9

Next perment date : Sectionher 02, 1996.

	Jun 4	د سد	May 31	May 30	May 29	Yr sgo	High	Low
Ordinary States	2792.2	2777.2	2791.8	2790.1	2806.9	2548.5	2885.2	2696.7
Ord. div. yield	3.99	4.01	4.00	3.99	3.97	4.21	4.06	276
P/E retto net	16.16	16.11	16.16	18.16	15.28	15.89	17.25	15.96
P/E ratio no .	15.97	15.90	15.94	15.95	18.08	15.66	17.03	15.76
Onthery Share Inde	a mines co	mpledon:	high 2065:	2 19009	6; fow 49.4	28/06/40	Base Det	E 1005
Ordinary Share			1-9- 2000			- 4000-0		

Onen 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 High Love 2784.4 2781.4 2779.7 2784.4 2782.6 2781.9 2785.6 2788.1 2782.0 2783.1 2778.6 Jun 4 Jun 3 May 31 May 30 May 29 Yr ago 35,574 33,028 32,007 33,838 25,389 1255,9 1894.2 1708.8 2018.7 1731.6 37,831 38,722 37,601 41,801 38,272 452.3 602.5 580.3 640.2 632.8 SEAQ bargains Equity turnover (Crift Equity bargainst Shares traded (nOt 31,718

Jun 4 Jun 3 May 31 May 30 May 29 Ye ago "High "1. 1104-30 1110,10 1140,40 1095,40 1096,20 - 1145,40 9 FT-SE AIM

Total Place 518	82 Week highs and low		
10mi Lanes 219	Total Higher 8	Total contracts 41	1,502
Total Falls 632	Total Lows . 3		4,620
Same 1,589	1	. Puts 26	0.882

SGA SOCRETE GENERALE ACCEPTANCE N.V. PRF 800.000.000 REVERSE FLOATING RATE NOTES DUE DECEMBER 2003

ISIN CODE : X50046033972

The Principal Paying Agent SOCRETE GENERALE BANK & TRUST - LUXEMBOURG

SGA SOCIETÉ GENERALE ACCEPTANCE N.V.

FRF 600,000,000 REVERSE FLOATING RATE NOTES DUE SEPTEMBER 2003

ISIN CODE : X50044791738 For the period June 03, 1996 to September 02, 1996 the new rate has been

The Principal Paying Agent SOCIETE GENERALE BANK & TRUST - LUXEMBOURG

FRF 2 488,28 for the denomination of FRF 100 000 FRF 24 882,81 for the denomination of FRF 1000 000

FRF 21.76,26 for the denomination of FRF 1.00 000 FRF 21.762,59 for the denomination of FRF 1.000 000

Monday on the back of a possible Oftel probe into mobile phone prices, rebounded as profits came in marginally ahead of forecasts. The group is holding margins in a competitive UK trad-

632.0	ing environment and the over-
D32,H	seas operations continue to
	make rapid progress. The stock
LOW BB.BB	added 41/2 at 254%p in above
00.00	average turnover of 20m, the
	day's heaviest Footsie volume.
	HSBC rallied 5 to 973p after

Salomon Brothers upgraded current year forecasts for the group to £4.2bn from £4.13bn which was already top of the range of analysts' forecasts. Barclays rose 16 to 774p. with dealers' support after a presentation at SBC Warburg.

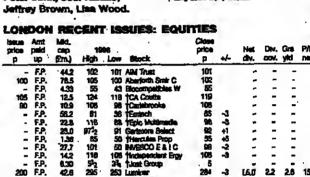
Yorkshire Water bounced 5

to 734p ahead of figures due today. In spite of Monday's ulator, hopes remain that the company might announce a share buyback.

Thames Water slipped 111/4 to 5790 in spite of confirming its intention to buy back 10 per cent of its shares. Full-year fig-ures were in line with analysts' forecasts, but the shares have risen strongly in response to the sector's recent takeover

activity. Pharmacenticala group SmithKline Beecham gained 16% at 674p after the company received US marketing clearance late on Monday for new paediatric dosages of its antibiotic drug Augmentin. It also launched a new treatment for cold sores as a prescription product in the UK.

MARKET REPORTERS: Peter John, Joel Kibazo,



Food Producers

42.6 115.2 83.7 26.8 253 Lumber 220 Makten Group 220 blatch Group
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	-	% chap	Mary .	Year	Cross dir	P/E	B2 w	rook;
	3	00 47	,\$1		ylaid %	1360	High	Low
Gold tilliam Indux (31)	2574.38	-8.1	2578.96	1889,29	1.30	-	2530.73	1722.95
III Regional Indicas								
Africa (13)	3144.05	+0.8	3119.26	2551.13	2.31	42.74	3553.86	2272.74
Australia (6)	2677.22	+0.2	2688,20	2167.03	2.48	29,86	2927.34	2098.51
Horib Asserta (12)	2114,02	-0.5	2126.45	1863.24	0.54	75.18	2185.39	1481.94
Copyright, The Firencial Times Limited, Figures in 31/12/82, † Partiel, Late	وتعكوما	MOW TH	arber til c	Committee of	BANG US D	pademe olara. Ba	nk of The so Values	Financia 1000.0

harsh comments from the reg-I-T - SE Actuaries Share Indices The UK Series P/E Xd adj. Total ratio ytd. Return Jun 3 May 51 May 30 mgo 14.41 83.77 1534.84 21.23 86.80 1802.05 20.06 90.83 1822.22 15.53 41.15 1588.40 12.67 48.54 1277.92 19.56 34.06 1371.15 24.18 29.50 1830.05 21.84 31.07 1840.57 15.89 39.55 1800.74 4,03 3,36 3,48 3,88 5,14 2,73 2,93 3,09 3,80 2.15 1.75 1.80 2.07 1.82 2.34 1.76 1.85 2.06 FT-SE 100 FT-SE Mid 250 FT-SE Mid 250 ex lay Trusts +0.4 5739.2 5747.8 5748.7 3580.0 -0.3 4505.5 4510.0 4500.0 3700.9 -0.5 4551.4 4553.0 4542.5 3708.5 4492.5 4538.2 FT-SE-A 350 Higher Yield FT-SE-A 350 Lower Yield +0.3 1686.5 1800.3 1898.9 1678.7 +0.1 1828.0 1892.0 1822.4 1702.3 +0.4 1972.3 1975.9 1975.7 1658.6 +0.1 2229.39 2229.72 2228.28 1868.07 FT-SE SmallCap FT-SE SmallCap ex lov Trusts FT-SE-A ALL-SHARE +0.1 2228.28 2226.73 2225.33 1845.02 +0.3 1882.29 1885.76 1884.42 1658.74 **E FT-SE Actuaries Ali-Share** Jun 3 May 31 May 50 and visited and P/E Xd adj. Total

	Jun 4	chge%	Jun 3 May 31	May 30	<b>ago</b>	ylekt%	COVEL	ratio	yto	Hetum
10 MINERAL EXTRACTION(24)	3482.97		3459.77 3484.42	3477.17	2689.80	3.87	1.83	17.63	79.03	1491.96
12 Edwardive Industrice(5)	4434,57		4458.37 4480.32	4515.89	3828.47	3.64	2.50			1304.85
15 Of, Integrated(S)	3484.50		3474.58 3477.67			4.11	1.72			1539,77
18 Of Exploration & Prod(16)	2494,55	-02	2499,29 2504,87	2502.04	2068.14	2.10	1,82			1501.29
20 GEN INDUSTRIALS(278)	2088.54		2002.22 2005.03			4.07	1.80	16.19	39.86	1148.40
21 Building & Construction(34)	1207.77		1209.80 1210.72	1208.51	1000.14	3.41	1.80	20,36	20,76	1013.04
22 Building Matte & Merche(29)	1909.80		1905.13 1897.23			3.96	1.75	18.01	38.43	967.04
23 Chemicala(25)	2514,13	-0.1	2516A1 2527,61	2525.45	2431.07	3.95	1.95	16.24	55,49	1196.68
24 Diversified Industrials(19)	1679,13		1679.86 1890.81			6.19	1.70	11.90	54.55	946.88
25 Sectronic & Bect Equip(37)	2461.49		2480.07 2482.87			3.00	1.66	25.12	14.34	1270.45
25 Engineering(71)	2429,85		2424,80 2431,97			3.14	2,48	16.05	20.75	1473.04
27 Engineering, Vehicles (13)	3087.70		3065.35 3068.92			3,45	1.96	18,49	53,22	1803.30
25 Paper, Poig & Printing(25)	2685.91		2726.61 2717.33			3.81	2.02	16.25	42.48	1118.96
29 Textiles & Apperei(19)	1407.88	-0.7	1417.40 1421.12	1409.85	1685.27	5.02	_1.54	16.22	39.63	867.30
30 CONSUMER GOODS(80)	3528.00	+0.7	3505.16 3516.85	3534.23	3149.76	3.98	1.57	16.80	78.74	1309.76
32 Alcoholic Beveragee(9)	2781.48		2775,76 2794,77			4.50	1.62		71.72	1009.76
33 Food Producers 239	2455.79		2429.84 2436.24			4.22	1,84		56.11	1114.59
34 Household Goode(15)	2807.91		2680,80 2684,85			3.68	2.41		56.76	1035.02
36 Heelth Care(20)	2082.19		2060.76 2075.03			2.58	1.62		28.16	1267.88
37 Phermacouticals(12)	5019.25		4964.00 4988.26			3.39	1.88			1708.14
38 Tobacco(1)	4417.58		4370.97 4396,39			5.76	2.12	10.00	156 18	1109.86
40 SERVICESCSS	2542.07		2535.87 2541,59							
41 Distributora(32)	2962.84		2978,44 2967,78			2.81 2.85	2.04	21.76		1327,56
42 Luisure & Hotelet2(3)	3196.30		3168.86 3183.57			2.76	1.77		38.37	1093.54
43 Media(46)	4212.50		4213.50 4217,46			215	1.95			1721.39
44 Retailers, Food(15)	2067.08		2050.35 2057.74			3.67	2.31			1526.22
45 Relaters, General(43)	2088.26		2096.36 2088.21			2.97	218		48.47	1326.41
47 Breweries, Pubs & Rest.(24)	3171.05	+0.5	3156.47 3179,18	3180.80	2411 12	3.20	2.15		37.77	1199,49
48 Support Services(49)	2442.07	+0.5	2434.43 2437.20	2440.12	1695.73	1.88	2.45	27.13		1525.81
49 Transport(21)	2401.39		2384.01 2405,42			3.67	1.49			1553.43
SO UTPLITEZESSE	2419.88		2426.39 2420,90				_	_		1003,82
52 Electricity(12)	2617.47	-10	2644.50 2657.97	2400,40	44 12-1U	5.44	2.05	11,21	55.22	1030.03
64 Gas Distribution(2)	1283.29	+20	1257.59 1283.53	1277 12	2007.09	6.02	2.43			1266.20
65 Telecommunications(7)	2062.80	-02	2085.96 2044.61	2020 79	2002.14	9.34	1.36		66.67	673.08
88 Webs(12)	2258.21	-0.6	2270.82 2259.35	2283 88	1000.03	4.27 5.70	1.89	15.48	9.04	937.74
CO NON-FINANCIALS/866	2008.49						2.40	_	3.61	1223.52
			2005.28 2008.30	_		3.82	1.84	16.85	40.68	1528.31
70 FINANCIALS(105)	2910.04	+0.7	2888.58 2895,24	2890,37	2484.86	4,10	2.65	11,48	75.85	1261.61
71 Benks, Flets (3)	3976,68	+1.3	3924.48 3832,23	3919,87	3351.14	3.91	2.80			1309.59
72 Barks, Merchant(5)	3685.25	+0.4	3689.13 5660.98	3647,04	3317,54	2.67	2.38	16.64	35.39	1167.42
73 insurance(23) 74 Ufe Assurance(5)	1509,40	+0.3	1505.42 1507.40	1514.59	1384.85	5.23	3.34			1144.25
74 Use Assurance(5) 77 Other Financia(21)	3493.23	-0,4	3505.57 3513.54	3502.54	2744,62	4.28	2.24			1464.38
79 Property(41)	2707.77		2707.54 2733.23			3.64	1,71	18.90		1547.21
	1533,49	-0.3	<u>1538.51</u> 1548.76	1542.32	1490,38	4.14	1,30	23.25	27.04	946.76
80 INVESTMENT TRUSTS(126)	3203.78	+0.1	3201.04 3219.43	3213.42	2831.93	2.16	1,07	53,47	_	
89 FT-SE-A ALL-SHARE(896)	1987.09		1882.29 1885,76			3.80	2.06			1120.31
FT-SE-A Fiedging	1274.7D		273.48 1272.70							1600,74
FT-SE-A Fledging ex inv Trusts	1289.83	+0.1	1288.36 1266.01	1205 17	1013.55	2.70	2.16	21.25	14.56	1333.15
				-203.17	1001.18	2.91	2.35	18.31	15.62	1349.10

FT-SE Mid 250 FT-SE-A 350	4508.3 1898.4		4500.B 1894.8	1897.2	4497.5 1895.4	.4497.1 1895.2	1896.8	3748.1 4494.9 1699.0	3753.8 4492.5 1900.8	3755.2 4507.0 1901.5	3735.2 4492.4 1894.6
Time of FT-SE 100 Da	ry's hight ≪	4 PM Day's	low: 9:32 A	M. FT-SE 10	10 1996 Ha	gh: 3657.1 (1	19/04/95) Lo	wc 2954,2 g	23/01/99		
FT-SE AC											
	Coars	9.00 1	0.00 11	00 12	10	00 140					

10.00 11.00 12.00 13.00 14.00 15.00

difficual information on the FT-SE Actuaries Share Indices is published in Saturday is

(APT)

		Open	Set	t price	Chang	e High	ı Lo	MF.	Est. vol	Open int
Jun		3745.0		59.5	+24.5	3786.			14549	48884
		3752.0		65.5	+24.5	3766.0			4337	12553
Sep		3770.0	37	92.5	+23.5	3785			20	832
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**LEGAL NOTICES** 

Italian Lire 100.000.000.000

Credito per le Imprese e le Opere

Pubbliche Societá per Azioni

Floating Rate Notes Due 2001

In accordance with the provisions of the Notes, notice is hereby given that for the Interest Period from May 31, 1996 to November 29, 1996 the Notes will carry an Interest Rate of 8.45% per annum. The amount of interest payable on November 29, 1996 will be italian Lire 42, 134,247

per Italian Lire 1,000,000,000 principal amount of Notes.

By: The Chase Manhattan Bank, N.A.

London, Agent Bank

June 5, 1996

CREDIOP S.p.A.

THE PORTAUTHORITY OF MYSKU

**AIRPORT ACCESS PROGRAM** uest For Qualifications (RFQ) and industry Review of currement Documents for Jamaica-IFK Lift System

The Port Authority of New York and New Jorsey (Port Authority) Intends to implement a fully automated Light Reill Transit (LRT) System serving the Central Terminal Area and other elements of John F. Kernnedy International Alphort (LRT), the Long Island Reill Road (LIRT) commuter rail and New York City Transit (NYCT) automay station complex in Jermica, and the NYCT subway station in Howard Beach. The Port Authority Intends to waved a strip subway station in Howard Maintein (DBOM) Contract using a competitive negotiation process.

The Project involves the furnishing of LFT vehicles, automatic train control, traction power, communications, Supervisory Control And Data Acquisition (SCADA) and tere collection for a fully automatic LFT System, as well as design, construction, integration of systems and facilities operations and maintenance for over eight miles of revenue track, approximately 2 miles of storage tracks, maintenance facilities, control center, and ten (10) stations. The DSOM Contractor will operate and maintain the LFT System for at least five years with additional years of service at the option of the Port Authority.

The purpose of this Request For Qualifications (RFQ) is to solicit a Statement of Qualifications from organizations which are both interested in and capable of executing the LRT System Project. Organizations demonstrating the capabilities to execute the ertitre LRT System Project will be proquetted and will be requested to submit a Proposal for DBOM services. The organizational capabilities required by Port Authority include:

(1) A "senice-proven" automated conventional steel wheel/steel rail technology expetie of transporting over 3,000 persons ps: hour par direction;
(2) Resources and experience in the design and heavy construction of major serial structures in active highway and airport environments;
(3) Sufficient financial resources to implement construction;
(4) Periomence bonding expectly for approximately \$300 million;
(5) Operations and maintenance of rail transit systems and facilities.

(a) Operation is an interiorate to their units systems and access and include firms or organizations which possess some, but not all, of the necessary publifies are encouraged to associate with other firms to form a consordium or it venture capable of executing the Project. The Statement of Qualifications must submitted by a single entity with all of the capabilities required to execute the LRT above. Unlaws.

Participation in an industry review of the Draft DBOM procurement documents is part of the proquelification process. Organizations submitting Statements of Qualifications will also provide comments on the draft documents. The RFQ and industry review process is voluntary and without compensation. Organizations capable of executing the LRT System Project and intensited in participating in the RFQ and industry review process must request the RFQ and accompanying documents no later than close of business, June 14 by sending a written request or facultario to:

The Port Authority of New York and New Jersey Airport Access Program 1 World Trade Cester, Suite 2121, New York, NY 10048 Attr: Mr. Jerrold Dinkots, P.E. Phone: (212) 438-3020 Fer. (212) 435-4195

Firms that do not have the above listed capabilities but would like to participate in the project can contact the Port Authority on June 17 for a list of Proposer Organizations.

PARANA

ISOLATED-PHASE BUSES CALL FOR BIDS

The design, prenalecture, shop tests, terminal and control boards, supervisor, and protective devices, transportation from the lectory to the Jobets, erection and commissioning supervision are included in the ecope of supply: This lowest price type international competition is open to individual comand/or joint vertures.
The costs releted to this supply will be covered by COPELs own funds.

The instructions to Bidders and the Contract Documents will be svalighte a bidders from May 31, 1996, until the day before the documents delivery date gainst payment in Brazilian correctoy of PS 180.00 (a hundred and fitty Reels) at the following addresses:

at the time of purchase of the instructions to Bidders and the Contract nts, the company shall present a letter combining name and int of the peech for contact, his/her complete mailing address, phone

Voluntarios da Pairia Street, ground Boor. The competition will be ruled by Brazilian Law no 8668, dated June 21, 1923, and by other conditions stated in the instructions to Bidders and in the Contract

**CONTRACTS & TENDERS** 

SALTO CAXIAS HYDROELECTRIC POWER STATION

**IQUACU RIVER** INTERNATIONAL COMPETITION C-302

COMPANHA PARANAENSE DE ENERGIA - COPEL, Informs that an intermetional competition is open for the supply of 4 (four) isolated-phase buses, 29.5KV - 60 Hz, three-phase, with all accessories for the Safto Caules Hydroelectric Power Station, located on the border of Capitalio Leônidae Marques and Nove Prata do Iguaspu counties, in the State of Parené, Brazil.

Superintandència de Obras de Geração Rua Voluntários de Pátrie, 231 - 5º Ander - Sale 504 80020-000 - Curitiba - PR, Brazil Phone (55-41) 322-1212 Ext. 5541 Fex. (55-41) 331-3265

Escritório COPEL / São Paulo Alameda Santos, 1800 - 14º Ander - Conj. 148 01418-200 - São Paulo - SP, Brazil Phone (65-11) 289-1431

The receipt of the Qualification Documents and the Price Bids is scheduled it agust 07, 1996, at 2:00 pm, at COPEL's office meeting room, in Curitibe, 233

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If the business decisions are yours, the computer system should be ours. http://www.hp.com/go/computing

HEWLETT PACKARD

Vault ahead.

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1 per close June 4 NYSE PRICES	NASDAQ NATIONAL MARKET 4pm ctsss June 4
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# Dow picks up after gains in \$ and bonds

climbed 0.8 per cent. Rising

Internet issues included Net-

com On-Line Communication

Services, up \$1 at \$34%, UUNet,

\$11/2 stronger at \$61, and Sun

Microsystems, which added

Shares in Coca-Cola Enter-

prises rose \$1% or 5 per cent to \$33% on news that the com-

pany, which is 49 per cent

owned by Coca-Cola, would buy the UK bottler of Cadbury

Schweppes and Coca-Col

drinks. The move marked

another in a recent string of

bottling company. Several retailers improved

yesterday. Home Depot added

\$2% at \$54%, Sears Roebuck climbed \$1% to \$51%, Wool-

worth was \$% stronger at \$21%

and JC Penney rose \$1 to \$52%.

fell \$1 or 4 per cent to \$23% after the Justice Department

objected to the railway's

merger with Union Pacific.

Shares in Union Pacific were

Cardinal Health added another \$3 to the \$3 it rose on

Monday, bringing the shares to \$69%. On Monday the pharma-

ceutical distribution company announced it had signed an agreement to be the sole supplier to Kmart pharmacies.

off \$% at \$70%.

48.6m shares.

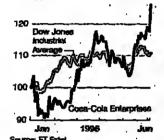
Shares in Southern Pacific

US share prices were stronger at midsession yesterday as the yield on the benchmark 30-year bond fell comfortably below 7 per cent and investors tried to set positions ahead of Fridey's release of May payroll figures, writes Lisa Bransten in New

At I pm, the Dow Jones industrial Average, which had fallen in five out of the previous six sessions, was 38.78 tirmer at 5,663.49. The Standard & Poor's 500 improved 4.11 to 671.79, but the American Stock Exchange composite lost 0.63 at 608.08. Volume on the New York Stock Exchange came to 223m shares.

Bond prices rose in early

Coca-Cola Enterprises Share price and index rebased



trading as the dollar rose to a 28-month high against the Japanese yen. A stronger dollar was interpreted as good for US stocks and bonds because it created increased demand by foreigners for US securities.

Technology shares were also stronger, led by gains in Internet-related companies. The Nasdag composite, which consists of about 40 per cent technology companies, added 5.71 at 1,344.44 and the Pacific Stock Exchange technology index rose 0.6 per cent. The American Stock quarter results, expected after Exchange/Interactive Week the market closed. Tha American Stock

#### Mexico adds 1.2%

higher in late morning trade, propped up by a firm peso and the healthy performance on Wall Street. The IPC index was up 39.49 at 3,231.27 in bullish buying pesos on expectations that rates would rise in last

night's Cetes auction. Cemex picked up 0.70 pesos to 27.80 pesos after CS First Boston upgraded its recommendation on the stock and raised its 1996 earnings esti-

SAO PAULO recouped some morning trade at 586.61. S Africa ends off day's highs

spurred by hopes of an inter-est rate cut, tapered off and made for a subdued afternoon

Golds were oniet, tracking the dull bullion price, as analysts cantioned that gold shares looked expensive at their current levels, compared with the bullion price.

Analysis noted that institu-

NATIONAL AND REGIONAL MARKETS

Australia (79)

France (97)

Japan (481).... Makayala (107) .

FT/S&P ACTUARIES WORLD INDICES

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rebounded 14 cents or 2.5 per cent to close at R5.64.

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# Sweden celebrates 12th repo rate cut this year

An old-fashioned rally in financials took over STOCK-HOLM, where the Swedisb crown soared, the Riksbank cut interest rates and the banking sector climbed 26 per cent. The Affärsvärlden General

index broke through 2,000 again, closing 28.2, or 1.4 per cent, higher at 2,000.7 The central bank lowered its repo rate for the twelfth time this year, this time by 30 basis points to 6.30 per cent. S.E.Banken moved ahead

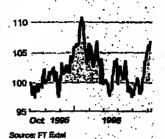
SKr1.50 to SKr54.50 in heavy turnover, and Swedhank rose SKr3 to SKr83.50. A fund manager said that banking and interesting alternatives to cyclicals. Elsewhere, Astra A recov-

ered SKr6 to SKr310 after soma profit-taking since May 23. when the pharmaceuticals was listed in New York. group was listed in New York.

MADRID took tima to
respond to the Bank of Spain's quarter-point cut in its benchmark interest rate but eventu-ally, and influenced additionally by a strong opening on Wall Street, the general index

closed 2.27 higher at 361.84. Turnover fell from Pta37.6bn to Pta33.5hn. The interest rate sensitives, such as hanks and utilities. were not strongly impressed. Tabacalera, the cigarette

Share price relative to the



maker tipped as one of the big privatisation stocks in the forthcoming round, climbed Pta6.170. The construction sector recovered to close 0.55 per cent higher after initial losses on announced public works spending cuts.

FRANKFURT saw more steadiness in bond markets, a slightly stronger dollar and, in the afternoon, a recovery in the Dow, but it was determinedly low-key in its response, the Dax index closing 6.43 higher at an Ibis-indicated 2,550.42, in turnover up from DM5.2bn to DM6.9bn. There were contrasts in banks: most of them were a

little depressed, presumably on interest rate fears, but Deutsche Bank put on DM1.10 at DM72.49. Ms Barbara Altmann of B Metzler said that a few positions were taken last week on the KHD affair, and that there may have been shortcovering yesterday.

took the fork-lift builder Linde hearish talk of an analysts' meeting at Thyssen left the DM5.60 lower at DM275.10. PARIS, rangebound, saw the CAC-40 index lose 10.1 at 2,111.00 in technical trade.

FFr375.60.

day's gains, closing 40 cen-times higher at FF1920; this was after a high of FFr9.60. On the opposite tack, SEP,

Elf Aquitaine fell FFr3.90 to

Where the market did gener

ate enthusiasm, it found it hard to sustain. Total, the oil group, rose as high as FFr381.30 on a one-third rise in five-month operating income, but slipped back to close FFr3.80 ahead at FFr376.50, after it forecast lower oil prices in the second half of this year.

Elsawhare, Volkswagen's hopes for a higher return on sales over the next five years left it DM8.05 better at DM549.45; technical buying up DM20.20 to DM1,000; but steel and engineering group

which built tha Ariane-5

flight shortly after blast-off. ZURICH returned to positive territory in a technical recovery after recent losses and the SMI index finished 23.5 higher

awaited Friday's presentation to analysts.

Eurotunnel added to Mon-A SFr70 rise to SFr2.850 in

FT-SE Actuaries Share Indices Hourly changes FT-SE Euroback 100 1660.99 1661.95 1681.66 1681.91 1681.85 1681.65 1681.45 1681.45 1681.25 FT-SE Euroback 200 1723.20 1725.10 1725.38 1725.36 1726.00 1726.61 1727.84 1727.74

Jun. 2 May 31 May 30 May 28 May 28 1677.46 1687.08 1679.37 1892.00 1899.17 1719.12 1734.98 1726.50 1732.47 1734.50 Best Value 1000 COVIDER: Healthy 100 - 1692-61: 200 - 1725-54 Leader: 100 - 1690-62 200 - 1725-61. † Partici engines, dropped FFr11 to Kuoni, for a two-day gain of 7.8 FF1605, but up from a low of FFr583, after the satellite rocket exploded on its maiden

at 3,568.1. although much of the day's action was seen in second line stocks. SMH, a beneficiary of several recent brokers' upgrades on prospects for improved sales in tha US, picked up another SFr21 to SFr880 as the market

Adia, the temporary employment agency which plans to merge with France's Ecco, added SFr15 at SFr310 in further response to last week's better than expected GNP fig-ures in France, which will provide the new group with 40 per

per cent, was attributed to improving prospects for consumer related stocks. A SFr18 rise in Nestle to SFr1.423 was said to be the

result of investors buying the

stock for the dividend.

Open 10.20 11.00 12.00 13.00 14.00 15.00 Close

MILAN edged ahead, helped by sharp rises in Pirelli and Olivetti and the firmer trend in domestic bonds. The Comit index picked up 1.91 to 663.04. Pirelli rose L102 to L2,582 after an analysts' meeting with the company was well received. Olivetti jumped L38.2 to L990.1 on confirmation that the company remained in nego-

state controlled Telecom Italia. Gemina, the financial holding company, recovered L9.5 to L650 after Monday's sharp

tiations with Deutsche Tele-

kom on plans for a telephone

network to compete with the

PRAGUE put in a steady performance after inconclusive

index sharply lower on Mon-day. The PX50 index finished

0.8 better at 531.4. Blue chips, which bore the brunt of Monday's losses, bounced back. SPT Telecom jumped Kcs95 to Kcs3,275 and the power utility CEZ was up

Kcs20 to Kcs1,150. ISTANBUL overcame early losses on selective afternoon demand and the IMKB 100 index finished 885.03, or 1.4 per cent, highar at 63,181.26 in sharply improved turnover of

Analysts attributed the early weakness to Monday's decision by MPs to debate a censure motion by Islamists against the prime minister, Mr Mesut Yilmaz, which would pave the way for the possible collapse of his Conservative coalition government with the former prime minister, Mrs Tansu Çiller. A vote on tha censure motion

will be on Saturday. WARSAW moved ahead for the third straight session but analysts cautioned that the market was likely to be pressured on uncertainty about the outcome of the June 16 presidential vote in Russia. The Wig index rose 254.8. or 2.1 per cent. to 12.314.83

Written and adited by William

# SingTel plunges as spec favourites recover in Tokyo

An 8 par cent plunge in Singapore Telecom dragged SINGAPORE down. Analysts Toronto was steady in midses-sion trade, lagging behind Wall said institutional profit-taking had dented SingTel and Singapore Technologies Industrial Corp, both of which had risen sharply ahead of their inclu-Street after both markats posted a moderate correction on Monday. The TSE-300 composite index was 3.81 higher by sion in the Morgan Stanley Capital International index. SingTel fell 32 cents to \$\$3.78

noon at 5,238.10 in volume of Among individual stocks. and STIC dropped 30 cents to Nowsco Well Service shed 5 \$\$3.84, pulling the Straits cents to C\$35.10 after it said Times Industrial index down that it would allow BJ Services 4.84 to 2.318.72, but off a day's access to confidential data; on low of 2,310.00. Monday BJ raised its offer for

#### Tokyo

Speculative stocks recovered after the sharp declines which unnerved investors on Monday, and the Nikkel average gained 1.3 per cent, writes Emiko Terazono in Tokyo. The 225 index rose 269.60 to 21,858,12 following a 1.7 per cent decline on Monday. The

index moved between 21,641.28 and 21,866.96. Volume totalled 327m shares. against 406m. The Toptx index of all first section stocks closed 16.91 up at 1,675.55 and the Nik-

kei 300 gained 3.29 at 310.90. Advances led declines by 792 to 246, with 178 issues unchanged. In London the ISE/Nikkei 50 index put on 1.42 at 1,465.82. There was active buying of speculative favourites, which lunged on Monday on fears that investors borrowing from Shinkyoto Shinpan, the credit company which collapsed,

Kanematsu, the trading company, was the most active issue of the day, jumping Y100 to Y717. Other speculative favourites which gained ground included Nagasakiya, the retailer, which rose Y75 to Y915, and Tokai Kogyo, a medium sized general contrac-tor, which anded Y10 up at

Banks rebounded following their bout of depression on the credit company's bankruptcy. Dai-Ichi Kangyo gained Y70 to Y1,980 and Sumitomo firmed Y10 to Y2,110.

The yen's easing helped export-oriented stocks, including the high-technology and

238.35 170.21 201.13 143.63 290.08 207.15 161.72 115.49 178.04 127.14 254.39 181.67 182.99 130.67 280.10 200.02 179.33 128.06

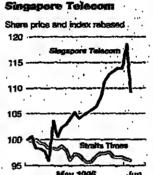
202.38 144.53 235.17 167.94

197.81 208.40 168.92 184.42 240.75 265.80 134.22 117.79 147.76 143.04 211.13 265.20 151.87 159.88

187.96 179.21 195.18 232.86

151.87 159.88 192.67 232.48 252.04 296.68 148.63 147.59 191,55

252.40 211.35 303.17 177.01



automobile sectors. Hopes of a rise in earnings helped carmakers. Toyota Motor climbing Y50 to Y2,510 and Honda Motor

Japan Tobacco, which tum-bled 4.7 per cent on Monday on fears of oversupply, continued to slide. The stock fell Y22,000 to Y859,000 as concerns over

Buying by foreign brokerages lifted telecom stocks. Nippon Telegraph and Telephone rose Y19,000 to Y810,000 and DDI, the long distance telecom oparator, added Y24,000 at

Y324. In Osaka, the OSE average was ahead 83.45 at 23.135.71 in

Karachi was closed as a mark of respect following the death of one of its members. JAK-ARTA decided that Indonesian tariff deregulation would help textiles and footwear, hnt while textiles gained, they were mostly small-capitalisation second-liners. Selling of big blue chips left the JKSE composite index down 8.56, or

pany PT Super Indah Makmur, which soared Rp1,075, or 78 per cent, to Rp2,450 on Monday on talk of better profits, and another Rp800 yesterday before subsiding to close Rp425 higher at Rn2 875

TAIPEI backed off the 6,000 level, the weighted index closing 51,57 lower at 5,921,92 as turnover shrank from T\$32.6bn

Financials and large-capital-isation stocks, which lifted the market on reports of a Morgan Stanley recommendation, encountered profit-taking, Shin Kong Life Insurance falling T\$2 to T\$111.5 and Formosa Plastics 80 cents to T\$47.5. WELLINGTON noted that the fall of 9.76 to 2.036.05 in the

NZSE-40 capital index was due

to Telecom and Lion Nathan

going ex-dividend. The NZSE-40 gross index, which adjusts for dividends, finished 7.33 ahead at 2,789.84. The Warehouse, a discount retailer, dropped another 28

cents to N7\$2.30 following Friday'a news that its 1995/96 operating profits would be around 36 per cent lower than forecast. But Air New Zealand B gained 20 cents to NZ\$4.65 after the Commerce Commission gave the carrier permission to buy up to 50 per cent of

SEOUL improved on expecta-

Australia's Ansett Holdings.

tions of an early settlement to the bribery scandal that led to the arrest of the head of the Securities Supervisory Board. The composite index closed 12.21 higher at 909.43.

The telecommunications sec-

tor benefited from expectations that a number of large-scale projects, involving parsonal communications services.

Korea Mobile Telecom rose Won30,000 to Won780,000. Sam-

sung Electronics, which fell sharply in recent days due to falling semiconductor prices, rose Won2,500 to Won74,500. HONG KONG edged higher in quiet trade, shrugging off external influences, and the Hang Seng index rose 27,10 to

11,086.91 in turnover that dwindled to a weak HK\$3.3bn. Sun Hung Kai & Co. however, rocketed 47.5 cents to HK\$3.025 on talk of possible rival bids by various groups against Allied Properties' agreed offer for the Fung family's 33 per cent stake in the ties rose 2 cents to HK\$1.09. Oriental Press continued to strengthen, up 20 cents to HK\$3.95 on signs of an end to the Chinese language newspa-per price war. Other newspapers benefited, Hong Kong Daily News rose 10 cents to HK\$1.26, Sing Tao 2.5 cents to HK\$4.475 and the English-lan-

guage South China Morning Post 50 cents to HK\$5,60. BOMBAY saw action in Texmaco, up Rs35 or 16.1 per cent to Rs252.56 on reports that the machinery maker was planning to restructure its tiny equity base. The broader market was weak on profit-taking by domestic and foreign funds and the BSE-30 index ended 5.55 off at 3,793.46 after an

Johannesburg finished off its best levels as morning buying.

The overall index rose 20.4 to 6.838.5. industrials gained 36.2 at 8,021.2 and golds tions and foreign investors stayed on the sidelinas as trade execution was hampered by the exchange's changeover to screen trading from open

outcry dealing.

Among notable advances, Amalgamated Banks of South Africa moved forward 50 cents or 2.2 per cent to R22.80, Anglovaal, the mining and industrial bolding group, appreciated R2 to R151 and Premier Group, the food and pharmacenticals concern.

Mexico City moved 1.2 per cent of Monday's loss on hopes that Mr Antonio Kandir, the new planning minister who took office yesterday, would bring good news for tha market when he spoke during his

Nowsco to C\$35 a share, New-bridge Networks jumped C\$1,10

to C\$96.60 ahead of fourth-

Bovespa index was 54.47 higher at 56.402. **BUENOS AIRES** regained its footing after Monday's 3.3 per cent tumble, the sharpest single-day fall for three months. helped by the bounce on Wall Street. The Merval index was standing 5.76 higher in late

would sell their holdings.

May 1996 urge: FT Extel Y60 to Y2,650.

the government's second offer of JT shares later this month

Y952,000. Large steel Issues were firmer, Nippon Steel gaining Y1 at Y363 and NKK Y10 at

#### volume of 32.6m shares.

1.4 per cent, at 615.92. Where one share price did rise a lot, the bourse decided to investigate: its target was the printing and packaging com-

# 

# fortis AG Capital increase by means of an exchange of

Meeting on 11 April 1996, the Board of Directors of Forms AG decided to increase the capital of the company by

1995 dividend rights for shares ("Stock dividend")

means of an exchange of 1995 dividend rights for shares ("stock dividend"), as follows:

: BEF 3.444 per new share, requiring a contribution of 41 no. 8 coupons of

Ordinary shares, each accompanied by an additional coupon sheet, known as the "VVPR strip", embodying the fiscal advantage enabling the holder to benefit from

a reduced level of investment withholding tax, currently 15%.

: from 6 to 18 June 1996 inclusive. Subscription period

Entidement of new shares : As from 1 January 1996.

Applications to exchange dividend rights for new shares may be submitted to the following institutions, from whom prospectuses describing the operation will be available: CENERALE DE BANQUE

METROPOLITAN BANK CREDIT A L'INDUSTRIE CAISSE PRIVEE BANQUE

BARCLAYS BANK Shareholders who do not possess a sufficient number of coupons to subscribe to a whole number of new shares may supplement their subscription by means of a cash adjustment enabling them to obtain the number of shares ediately above that to which they are entitled by virtue of the coupons they possess. The adjustment amount payable will be equal to the missing number of no. 8 coupons multiplied by BEF 84. Only one cash adjustment will be

BANQUE UCL

Shareholders are also entitled to apply only part of their coupons to subscribing new shares The results of the capital increase will be published in the press on 24 June 1996.

No. Il coupons not used for subscribing new shares will be payable in cash at the above-mentioned institutions, as from

Shareholders wishing to benefit from investment withholding tax at the reduced rate of 15% must present two coupons : coupon no. 8 of the share melf and coupon no. 8 of the "VVPR strip" coupon sheet. In this case, they will receive a net dividend of 8EF 95.20. Shareholders presenting only the no. 8 coupon of the share itself will receive BEF 84 net per share, i.e. after deduction of investment withholding tax at the normal rate of 25%

Applications have been made to have the new shares and "VVPR strip" coupon sheets listed on the Brussels and

Answerp stock exchanges. Applications have also been made to have only the new shares listed on the Luxembourg and London stock exchanges

Boulevard E. Jacquain 53

Fortis AC

1000 Brussch

Brussels, 5 June 1996

Chairman - Managing Director

For the Board of Directors

ASLK-CGER BANK

211,12 213,10



**Focus** IT in sport Race for the technical edge



**Directions** Larry Ellison Champion of the network computer. Pages 7-10

Software at work Risk management How to stay profitable



manufacturing The pace quickens

Stockwatch How shares are performing Page 24

# Information Technology

Wednesday June 5 1996









used by a technology volunteer to

# Sporting world offers an unrivalled showcase for technology

From motorsport and football to athletics and yatching, sports sponsorship is big business for IT suppliers. IBM, for example, is among the sponsors of the 1996 Olympic Games, described as the most technologically-advanced sporting event in history

WO SPOTTING SPECTACULARS this summer - the Olympics and the European Football Championship - will provide the world's leading information technology companies with an unprecedented **持載 ef Jin rixchange** opportunity to display their

er in Tol

products and services.
Indeed, given the scale, complexity and costs involved in organising and running such events, it is doubtful whether they could take place at all without using IT and enlisting the help of IT industry spon-

> Overall, North American companies will spend an estimated \$3.5bn on sponsorship of sports this year. And while the information technology industry lags behind makers of cars. cigarettes, soft drinks and other household products in total spending, it is among the sports sponsorship field.

Aside from International Business Machine's sponsorship of the summer Olympics lett-Packard is backing World Cup Soccer, and a racing car team 3Com, the Silicon Valley networking equipment com-

v. has put its name on th San Francisco 49er's football

Sports aponsorship may appear to be a symbol of corporate largess. In reality, it is big business. Corporate sponsorships of sporting events which can range from a few thousand dollars to tens of millions - typically produce onb-lic "exposure" valued et around ten times the cost of the sponsorship, according to

This goes well beyond attracting the attention of fans in the stands at a sporting event Television coverage of an avent raises the stakes, while opportunities to entertain corporate customers are

another draw. The IT industry is, however, moving beyond the traditional a form of "brand marketing". In many instances, computer and software companies also provide the equipment and information technology services required by hig events.

As with other large events. international sports championships are logistical nightmares. For example, organising the

Olympic games is the equivalient of holding two American Football Superbowls every day. for 17 days, or the same as aoccer : World Cups simulta-

For Euro 96, Sema Group. tha Anglo-French computer services group, Microsoft, the US software developer, Digital Equipment and British Telecommunications have combined to form the technology team which is responsible for marketing experts. .. providing technology for the matches which will take place ecross eight football grounds

> Wembley. Everyone involved in the tournament, including 6,000 media representatives, over 2,000 staff and players, 1.4m ticket holders and a cumula-6.9hn will rely on the technology. Among the projects they have already completed is the eccreditation system which streamlines the normal lengthy registration process for the more than 8,000 people

In addition to the accredita-

tion system, other interrelated applications include the VIP management, volunteer management and materials management systems, the information system and the results service. These systems will all work together on a common platform based on Digital hardware and Microsoft Windows

Paul Taylor and

Keith Wheatley

from Antield in Liverpool to

administration centres in each of the eight cities. All of the systems in each venue will be linked on a local area network, and all the cities will be linked to a central server using an ISDN (integrated systems digi-Meanwhile, IBM has already

built extensive information technology systems for the . summer Olympics. During the

build-up to the games, for example, IBM has provided three-dimensional virtual reality systems used to simulate stadiums still under construc-Bob Stiles. Olympic Stadium

venne manager, recalls e visit by 500 National Olympic Committee officials: "They were in NT software allowing the Atlanta to review the status of exchange of data between Games preparation and were keenly interested in tha (then There will be media and incomplete) Olympic stadium," he said. Stiles was able to show his guests a three-dimensional This report by computer simulated vidao Louise Kehoe,

ture, (see picture, above, centre). IBM is one of the main spop sors for the Olympics, which will involve 10,000 athlates. from 197 countries competing in 271 events at 30 different vennes. Over the course of the Games, approximately 67 per expected to view some part of the sporting events.

With no local or national vernment money to be spent on this year's Games, approximetely 70 per cent of the Atlanta Committee for the Olympic Games' \$1.7bn budget will come from sponsorship.

According to sponsorsblp industry experts, about 20 companies will spend \$40m or more to become either "domestic partners" of the Olympic organisation or "worldwide sponsors", another 23 lesser

Among IBM's other contributions to the Olympics are an electronic mail system to link all ethletes, coaches and trainers, an extensive library of Olympics information on tha Internet and on-site touchscreen terminals that provide event schedules and venue

Perhaps the most visible part of the information technology systems at the Olympics, howtem, also built by IBM, which will provide virtually instant updates on the scores and times of all events and the performance of individual ath-letes. IBM believes that the Olympic Games provide "an technology. The company began sponsoring Olympic events 36 years ago and has already committed to sponsoring future Games in Nagano

and Sydney. Similarly, Hewlett-Packard is sponsoring, and helping to facilitate World Cup soccer. This involves building systems to link ten venues prior to the final games that will take place in France in sponsors will each spend \$4m 1998. Already, plans are well under way for systems to handle ticketing, accreditation of players, coaches and other team staff, transportation and

logistics. These are "mission critical applications" that will demonstrate HP's technology in action, says Katey Kennedy, HP's maneger of the World Cup project. The sponsorship is the largest-ever undertaken by HP which has also sponsored racing car teams. Americas Cup yacht teams, soccer and

rugby clubs.
For HP, the World Cup also represents an opportunity to promote its brand name among sports fans, perticularly in Europe and South America, at a time when the company is expanding its involvement in retail and consumer markets for personal computers and

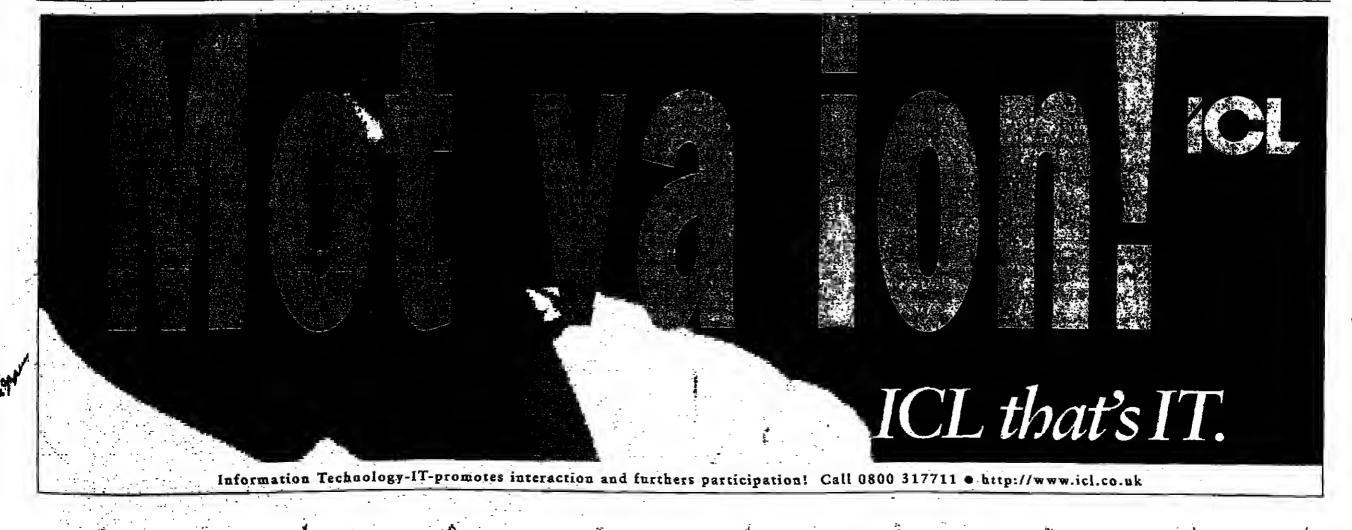
Continued on page 2



spectators; 11.2 tickets issued. TV broadcasting: 67 per cent of watch the games, making a cumulative TV audience of 3.5bn. Computer technology: four main frame computers, 80 AS/400 servers more than 7,000 desidop and notebook PCs, at least 1,000 laser orinte and 250 local area networks: phones including 1,700 wireless phones, more than 6,000 pagers, at least 0.500 radios, more than 500 da fines and 11,500 televisions. Other IT facts: the Olympic Web page (http://www.atlanta.olympic.org is expected to attract between 5m ar

10m 'hits' a dav. Info '96, the Olympic database contains 60 gigabytes of Olympic history, equivalent 384,000 typewritt pages - sufficient for e paper path ween London and San Francisco characters of information, enough to fill a daily newspaper for the next 30,000 years or the same as e stack

of double-spaced typewritten pages During the 18 days of competition printers will produce 30m pages of ts and figures for the media. With more than 540 sessions spanning 26 sports, the Olympic committee expects to process 3,000 ticket requests an hour.



#### Sporting challenges for the IT industry

# No second chances

Around the world, few sporting events are staged without the involvement of information technology. There are special considerations which are not found in a normal commercial environment. Here, Rod Newing outlines some of the unique problems and opportunities

magine setting up e \$1.6bn corporation with 252 offices in 100 cities and 140,000 employees all linked by computer, telephone, digital TV, cellular and radio. Imagine you run it for 17 days and then you sbut it down - that's the Atlanta Olympics.

Around the world, few sporting events are staged without the involvement of information technology. The most advanced epplications of IT in sport will be et the 1996 Olympic Games in Atlanta in the US. Organising the games is the equivalent of hosting the final stages of 20 soccer World Cups, simulteneously. The games are likely to be watched by nearly two-thirds of the world's population.

#### Key role

IT will also play a crucial role in Euro 96 - the finals of the European football championship being beld in the UK between June 8 and 16. Euro 96 which is the largest sporting event in Europe this year.

Apart from these sporting spectaculars. IT is also essen-lial to a wide variety of other activities such as motorsport, basehall, salling, cricket and tennis, to name a few.

Even at the small club and base applications are now used

for entries and results. But for large international events, no single IT company can provide all the services necessary, so groups of companies are appointed, with one of their number being appointed as integrator. At the Olympics. IBM leads AT&T. Bell South, Kodak, Motorola, Panasonic, Sensormatic, Swetch and Xerox, while Sema Group lead BT. Digital and Microsoft at

Euro 96. When we originally proposed the really outrageous idea of bringing the Olympic Games to Atlanta, we knew we would need the help of some of the world's greatest companies," says Billy Payne, chief executive and president of the Atlante Committee for the Olympic Games, Acog. This co-operative effort

brings unprecedented co-operation from rival IT companies. "We have worked with IBM in Barcelons and are working with them in Atlanta and Sydney," says Martin Trees, marketing director at Sema Group. "We are also working with EDS in the World Cup in Dallas. EDS and IBM are normally our 'deadliest' competitors, but we choose to work together because nobody can provide all the expertise. We need to form consortia for each major event. We know who has key areas of

expertise - end we work

The larger events have become so complex that they could not be planned, managed or operated without the support of the IT industry through the provision of bardware, software, services, expertise, project management, key systems, worldwide telecommunications

and technology transfer. Whatever the event, It will require a number of systems, including accommodation, accreditation, computer-alded design, event-scheduling and information systems for media

#### United projects

Then there is materials man-agement, medical, project management, recruiting and managing volunteers, results, retail merchendising, security, ticketing, transportation, VIP management, weather forecasting and many others. It is important to remember that these are not just a series of standalone epplications, but must all be linked to share the same

System re-use is essential to minimise the risk and cost of development. Such is the involvement of IT that organisations such as BT, IBM, EDS, Sema and Sybase, take a long-term view, using their expertise and systems in a wide range of events. In the case of the Olympics. IBM has been involved since 1960, at the Squaw Valley Winter Olympics in California, which were the first to use IT.

IBM's current agreement with the International Olympic Committee runs from 1992 to 2000, with an option to extend to 2004. Meanwhile, Sema's expertise in sports results will

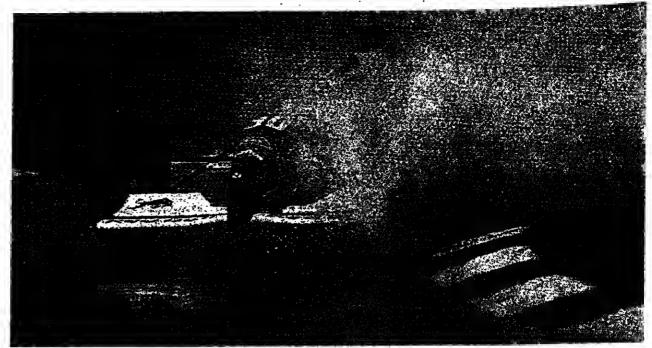
be used at Wimbledon tennis championships; the company's systems will also be used at the Mediterranean games. With the expension of the

Internet, sporting events of many types must now have their worldwide web sites which have proved to be highly popular, attracting large numbers of accesses from fans. Results are becoming increasingly scaleable, using powerful parallel processing servers, (see report below).

Another issue with sporting events is the volume and frequency of result updates, allowing computer users to chart the progress of events, as well as receiving results and accessing event information.
"It is closer to broadcasting than publishing," says Jose-Luis Iribarren, IBM's Manager of Olympic and Sports Internet

sporting events pose is the need for total reliability without an opportunity for a ... full-scale test - "there can be no overall dress rehearsal, only the components can be tested," says Martin Clague, general manager of worldwide clientserver computing at IBM. The systems must be 'architected' against failure," he

Another problem which



Split-second timing is crucial in motorsport. Since 1982 the Swiss company TAG Huer has been the official Formula One timekeeper and also a sponsor of the Ferreri and McLaren teams. The mergin for error is almost non-existent, since success or failure can hinge on a thousandth of a second. Pictured here is Formula One driver FLH.Frentzen in action in the Grand Prix d'Argentine

adds. "During development, you have to make trade-offs. because you can't chance new untested technology just because it offers potential. You make lots of mistakes, but the most important thing is to capture what you don't know and move on.

Sponsorship of large sporting events (see report, page one) provides considerable commercial benefits to IT companies. Eli Primrose-Smith, the former international swimmer who is now IBM'e director of worldwide Olympic and sports operations, ecknowledges that the event provides e unique showcase for technology: "This is IBM's greatest coportunity. The Olympics are watched by

3bn TV viewers, equal to two-

195 countries. It has worldwide impact and the Olympic rings are tha best-known symbol after the Christian cross.

The relationship between

sport and IT is mutually beneficial IBM has been "a valued partner of the World Wide Olympic Movement since 1960," eays Juan Antonio Samaranch, president of the International Olympic Commit-

tee. IT sports systems are unlike any others - "they are mission critical and high profile. There can be no disasters and there is no second chance," comments Billy

Payne in Atlanta. A similar view is expressed by Glen Kirton, Euro 96 tournament director at the Football Association. "We only get one

El Sport on the Internet • By Stephen McGookin

## Wired-up sports fans log-on for computerised, collated statistics

The Net is a natural medium when it comes to analysing and presenting the kind of intensive statistical information on which sports analysts depend

very time Totlenham's miership goal; or Cecil Fielder hammers a bome rum out of centres, with the aim being for Detroit's Tiger Stadium; or the site to be updated from the Charles Barkley loops in e three-pointer for the Suns. there's someone, somewhere, who lives for the 'stat'.

And with the proliferation of fantasy sports games on both sides of the Atlantic over the past couple of years, there are countless thousands of Interuet users who log in regularly to keep up to date with the exploits of sporting beroes they

in the US, fantasy leagues are hig business and there are hundreds of companies selling computerised, collated statistics, custom-tailored to the needs of armchair sports fans, for whom a black and white box score can literally bring a

When Britain's Electronic Telegraph launched its fantasy soccer game last year, based on the English premier league, it was overwhelmed with entries both from existing users of the paper's site and a significant number of new recruits.

It has been a perfect example of an information provider giving a premium, added-value e to its audience, who largely consider the £10 entrance fee worth paying.

With soccer's European Championship tournament about to begin in England, the Microsoft-led official site (mereneuro96.org) is an integral part of the tournament's overall information distribution

Visitors to the site will be Teddy Sherlugham getting practically the same scores yet another Pre- information as journalists in the tournament's eight media results service approximately

every 10 seconds. The site has exclusive rights to television and radio highlights throughout the tournament, and it also features a Fan Forum, similar to an interactive Usenet newsgroup.

But over and above the hundreds of bulletin boards, chat rooms, newsgroups and mailing lists where sporting perfor-mances can be critiqued and debated, the Net is a natural medium when it comes to analysing and presenting the kind of intensive statistical information on which sports analysts amateur and professional -

#### More dimensions

PowerPlay, an internet-based product from Massachusetts company Cornes, is capable of processing a high volume of statistical data and presenting It in a way that lets the user see it "multi-dimensionally" in multiple combinations or views; similar, as the company says, to turning the faces on a Rubik's Cube.

For instance, using Power-Play to analyse baseball statis-tics allows the viewer to ask very detailed questions relating to the performances of teams and individual players in specific situations.

If he really needs to, a fan could find out how well a particular player hits against right-handed pitchers in night RADER BENE

GO ON, SURFRISE US - WHAT IS THE AVERAGE

SHOE STZE OF THE ALBANIAN BURDY SQUAD?

games on the road during widely-used software for this Entertaining August; with two outs in the form of online analytical pro-seventh and runners in scoring cessing. Details are available at

Ketan Karia of Cognos says the company is developing and expanding the applications for the technology specifically for Europe and the UK.

While soccer tournaments are a natural, there is also the more serious husiness of politics. With a general election looming, tracking individual daily opinion polls and analysing their findings could be made easier and much more productive

"With this product, you just throw the data at it and it gives you breakdowns from lots of different angles," says Karia

The corporate applications are also extensive, he believes. "Companies don't always realise that their information is a commodity. We're targeting organisations who have lots of data locked up and trying to change the way they use their information."

PowerPlay, which recently won PC Week's PT Excellence

the Cognos web site (www.cog-

With the centennial Olympics coming up in Atlanta, IBM expects the official games Web site (www.atlanta.olympic.org) to generate between five and 10 million hits - or about three

million visits - a day. The information logistics of the Games - the equivalent of holding two Superbowls every day for 17 days, or 20 World Cup finals simultaneously eans the challenge of getting the results oul quickly and accurately bas never been

While this is the first time Olympics results have been accessible through the Web. IBM believes the official site will be "the closest thing to being at the Games."

The Atlanta Journal-Constitution'e Olympics countdown site (www.atlantagames.com/index.htm) is also well worth a

browse. Looking even further ahead, EDS is the official information France, and is planning to build on its success at the last finals in USA'94.

But for the wired sports fan, there are literally more sports Net sites out there than you can shake a Louisville Slugger

Use a search engine to narrow down exactly what you want, but as far as originality and general sports enjoyment goes, there are one or two worthy of a special mention.

Baseball: check out Fastball (termo fastball.com), the Cox newspapers' site which makes

extensive use of RealAudio to

provide hourly sports updates.

Sportsline USA (www.sportsline.com) is an excellent sub scription-based service which among a wide range of bugely entertaining meterial, has a 'live' play-by-play facility which shows a graphical representation of every game in progress together with auto-matically refreshed box scores.

John Skilton's Baseball Links (www.pc-professor. com/ baseball() is one of the most comprehensive and well-presented resource pages, with excellent coverage of the minor leagues and top-notch stats

 Soccer: Absolutely the place to start is the Virtual Library (www.atm.ch.cam.ac.uk/sports) webs.html), which has links to nearly every soccer site on the

 Basketball: The official NBA site (www.nba.com) presents the corporate face of the game; while Gionet's Basket-ball Links (www.cyberbeach. net/% 7Egionet/sports/basketball) collates more hoops links than the average fan could !"



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by 'start'. If callers have technical problems regarding this service, telephone 0171 873 4378. Callers from outside the UK should dial: +44 171 873 4378



ms in the round-the-world yacht race now transmit position, course and speed, four times a day.

Pictured here: Heineken leads Winston in the Whitbread round-the-world race for the Heineken Troots



ming editor: Michael Wiltshire Nitters in this issue, (volume two, number five) Paul Taylor, IT Correspondent, Andrew Baxter, Louise Kehoe, Tom Foremski, Rod Newing, George Black, Philip Manchester, Michael Dempsey, John Kavanagh, Geoffrey Wheelwright, Nuals Moran, Marcin MacLeod, Danny Bradbury, Geoffrey Naim, Jane Stirling, Philip Crawford, Mike Farish.

Graphics: Robert Hutchison and Steven Barnerd Mustrations: Roger Besie and John Springs Statistical research: Keith Frav Ficture research: Patricia Lee and Matthew Glynn

IT Directions: Systems Support and Security.

The next issue, July 3: Main Focus: Networking IT Directions: Multimedia in Entertainment and Education Software: Internet Software Tools.

There is no review in August; the main themes for September will Focus on Computers in Finance.

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#### award, is the world's most technology services provider of The high value of sports sponsorship

#### Continued from Page 1

As is typical of most sports ponsorship contracts, HP will e given prime billing on event literature and at promotional events. Beyond that, however, t is up to the company to leverage its investment in the sporting event, said Ms Kenn-

This may involve advertising linked to the event, press guides and events, billboards and promotions with local dealers in places where the World Cup is heavily watched. In the motor racing world, aficionadoes of Grand Prix will follow the Saturday afternoon qualifying session almost as sely as the race itself on the following day. The fastest time gives pole position and, on many tracks where overtaking is virtually impossible, a huge impetus towards victory.

Accurate timing is vital. Since 1992 the Swiss company TAG Huer has been the official Formula One timekeeper and also a sponsor of the Ferrari and McLaren teams. The margin for error is almost non-existenl. since success or failure can hinge on a thousandth of a second.

In the media centre and in

rely totally on a series of five where hours not micro-seconds computerised screens provide are the temporal currency. Yet by TAG which show lap times, the complexities of recording average speeds on different and relaying the results in a sectors, and a continually updated table of fastest drivkey competition such as The Open are a challenge to inforers. During practice or qualifymation technology.

ing, with up to 26 teams on the circuit the flow of information can be astonishing. "Formula One presents the company with one of our great-est challenges, where split-second accuracy and precision must be totally guaranteed," said TAG Huer chief executive Christian Viros.

Golf might seem the antith-

Facts about Euro 96 The finals of European Footbalt Championship take place.

between June 8 and June 30. between Julia B and Julie 30.

Stopen national teams, having qualified in the prefinition competition among 47 teams, having qualified in the prefinition competition among 47 teams, will be playing in 31 matches in eight vacues across England: 1,501 tickets are being issued.

Broadcasting and media: the 31 matches will be broadcast to 150 countries with an average audience of 220m and a cumulative audience of 630m, 6,000 journalists, photographers are broadcasters will be intoleed, up to 13,000 people are expected to be accredited to work within controlled to less.

The Internet address is www.acrost.com.

Technology includes: 500 desistop personal computes and ... notebooks, 55 servers and 40 local area networks; 500 mobile telephones, 500 wellde talloles and 500 pagers.

Security, ten police torces have constructed the UK's largest ever computerised "football intelligence" operation.

goes back to leader-hoards scattered around a course that may up to 10km in length. It takes around 14km of cabling to service the 100 PC

workstations and printers doted around the course. Two Four days of play, 156 players over 72 holes and a public Unisys servers (one for back-up) are hased at the and media demand for a realcourse in a trailer. "We have to time leader board gives the serrun from 7am until 10pm with zero downtime," says David Fox of Unisys. "We can't afford a failure. Apart from the scor-

vice provider a major chal-Unisys has been the Royal & Ancient's partner since 1980. It ing system for officials and now deploys hand-held radio spectators, we provide comterminals at each green to send puter graphics for the BBC and results directly to a central other TV broadcasters."

> et the geographical demands of a golf course are as nothing compared with the spread of e round-theworld yacht race. In September this year, the BT Global Challenge sails from Southamoton. Fourteen yachts racing a 32.000-mile course over a 10month period. Goue are the days of snap'crackle and pop over high frequency radio. Each boat has an Inmarsat C terminal that will transmit position, course and speed four times a dey, more often if

requested. At race headquarters BT outweigh the polential pitfalls.

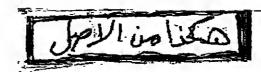
able via dial-in database that anyone with a fax can download from, in addition the current positions and situation will be constantly available from a World Wide Web site.

The Internet's multimedia capability means there are likely to be audio and video clips available from crews and skippers whilst the yachts are at sea, making Cape Horn as audience-friendly as the local football stadium.

There are, of course, risks attached to sports sponsorship. in the World Cup, for example, teams representing countries that are prime markets for HP could be knocked out in the early rounds.

Scandals involving athletes. violence in the stands, bad weather that forces the postponement of a big event, political tensions laading to an Olympics boycott, the crash of a sponsored race car - could significantly reduce the values of a company's investment in

sponsorship. Yet industry experts maintain that the high value of sports sponsorships that place a company's name in the view of millions of sports fans, far



#### IT in sport

Electronic results systems . By Rod Newing

# Scoring with pin-point accuracy

As many 'live' sports events attract worldwide audiences, instant sports results have such a high profile that the behind-the-scenes information systems cannot be allowed to fail

hen it comes to results, broadcast to 150 countries, "you can't get it wrong - because if you do, several hundred million viewers will know a few seconds before you do", warns Martin Trees, marketing director of Sema Group, who are the lead technology sponsor to

Euro 96. "Quality is so important because the results system provides an automatic 'feed' to a live TV graphic," be says. This sums up one of the many challenges which face IT companies responsible for the systems which record sports events as they happen. While an event is in prog-

ress, systems are needed to

Euro 96: antermation flow

record statistica, provide them to broadcast commentators, along with competitor details and to record results. When the event is over, the results need to be made available to the organisation itself, officials, athletes, media and the world at large. These high-pro-file systems are "missioo critical" and must not fail.

This results exercise has to be done not once, but repeated over and over again: the Olympics, for example, involve 26 sports with 37 disciplines and 271 medal events at 27 venues. The results' system for Euro 96 involves 31 large-scale soccer events at eight grounds. It is also vital that these systems are intuitive and easy to use. puter literate and will have no opportunity for training. The Olympic information system will have 150,000 users

All events tend to fall into one of four broad categories, which are team events, judged events, timed and head-to-head events. These systems can be shared within their category, hut must allow customisation to each event.

#### Laptop PCs

At the Atlanta team events, volunteers stationed at event sites will be equipped with customised pen-based laptop computers with interfaces that duplicate the sport's field and uses sport-specific language and symbols for likely events and players.

The 'pen' allows observers to touch the screen symbol of a player, then a spot on the field of play and then an action which occurred. This allows

register the action as it happens, such as capturing which baskethall player just made an assist or which football player scored a goal.

The system can he configured for different sports and provides a feed through a wireless local area network (Lan) to the results, information and

Euro 96 has a similar system to the one in Atlanta, but it uses a Digital Ultra Hi-Note pen-based system with a mouse, which users prefer. At judged events, officials enter scores, which are then

forwarded to the head judge who bolds approval or veto power. In events such as gymnastics, where scores are averaged, the approved marks are automatically averaged to deliver the final score.

Other systems capture details of times events, which are then communicated to the results system. For instance, at an Olympic track event. Swatch measures time, speed and distance by using a high-speed camera that samples the image of the finish line thousands of times a second. This information is digitised and integrated into the results system.

Having captured statistics and results at the venue, the system must compute the meaning of this score within the context of the competition and transmit the data to a variety of integrated information systems to provide instant results. Systems must be constantly improved to keep up with the public thirst for information - "with the results system, you have to keep it simple, but deliver something new and exciting to the customer, explains Mr Trees.

Every large event has to keep everyone involved up-to-date with what is going oo, which is dooe through informatioo kiosks. These provide reference material, such as competitor biographies and images, event history, current records, schedules, transportatioo, weather forecasts and entertainment. These kiosks also provide key information such as latest sports headlines. news flashes, full results, statistics, new records and so on.

Electronic-mail and hulletin boards are also provided at the Olympics, allowing competi-tors, officials and the media to communicate with each other. This system needs to he updated regularly from the

results system; at the Olympics

this is done every two minutes.

#### Commentaries

The broadcast media need to be able to provide up-to-date information, so a commentator informatioo system is required This takes a 'feed' from the results system to show statistics about the current event and results from others which are going on at the same time, plus another feed from the information system to provide athlete biographies and statis-

Commentators oeed to log in with their nationality, so the system can highlight information on their national athletes. "The biggest problem with

results systems is the require ment not to interfere with the eveot," says Bruce Sanders, from IBM's 1996 Olympic Games Project Team. "Back-up and redundancy is needed at every stage in the system, as eveot schedules cannot he missed because of faults in timing or scoring systems."



thile rival teams across Europe were in intensive training in the run-up to Euro 96, England players, returning from the Far East, were caught up in a blaze of publicity as the Football Association - the hosts of the tournament - later launched an investigation into an incident during a 13-hour flight on a Cathay Pacific 747, in which two video screens were smashed causing £5,000 of damage during a party to celebrate Gascolgne's 29th birthday. Last Sunday, the England squad resumed training at their Bu ches headquarters. Euro 96 is expected to generate total revenues of more than £150m.

-on for tatistic

E . . . !-

Euro 96 . By Michael Dempsey

Historical and

### Technology team with a very serious goal

Euro 96 presents a big technical challenge for the Sema Group and its IT partners

he 16 national teams participating in Euro 96 have their hearts firmly set on sporting glory. Martin Trees, marketing director of Sema, the £700m European systems and services group. has an even more serious goal: Sema will earning a large chunk of the £10m being shared between the four techoology partners organising

But Mr Trees reckons that in its role of co-ordinating efforts by BT, Microsoft and Digital Sema can put it own name on the map - "to be realistic. we're doing this purely for the marketing", he says. This sporting event offers Sema the chance to prove its ability to create a virtual company io next to no time under a glare of media attention.

By the first kick-off on June 6, Sema will have delivered the management systems to run a 10,000 strong company. This commercial eotity will have sprung out of nowhere, and will have no inherited management structure.

Accreditation and keeping track of VIPs is a big headache in the largest footballing event staged to England for 30 years. Furthermore, members of the media corps following the championships have differing levels of access to matches and venues. Behind the badge carried by every player there will be a database of human details.

covering everything from die-

tary requirements to the level of security required. Clearly, some nations are

considered as more sensitive and accreditation systems with than others in the security one interface because we don't area. Sema, which has considerable experience in this field through contracts with the French military - among others - is justifiably tight-lipped about certain elements of the switch from one role to accreditatioo process.

Badges, for example, will only be produced at the last possible moment: given a tight timescale, there can be no room for error in the data attached to 15,000 badges. Meanwhile, Microsoft has

performed a key role in sorting out accreditation. Philip Stradling, Euro 96 project manager at Microsoft, explains that while Sema developed much of the system specification in Barcelona, his people helped shift a team of experts in the large mainframe computer environment over to the world of Windows 95. "We put people out there to

'hold hands' and to get over product information and key issues about the client server side of things," he says.

#### Graphics

The importance of graphics in transmitting coverage of sporting events played up to the products in which Microsoft excels. The company's experieoce in easy-to-grasp graphical interfaces was needed if UK Football Association staff were going to come to terms with the new system in a very short time.

Mr Stradling says Microsoft entered the Euro 96 consortium in the autumn of 1995. With Microsoft's best-selling Office software package, a standard project tool set of graphics were needed to bridge the divide between that software and the accreditation system - "we integrated office

ooe interface because we don't know from one day to the cext who'll be using which system for what purpose," he says. The idea is to huild an envi-

another without being aware of moving to a different sys-

Graphics, as Microsoft has long proclaimed, are a useful way to cope with different types of data. So Microsoft echoes Sema's ambition of using a football championship to get a deeper message across.

The four IT partners each have separate contracts, says Mr Stradling.

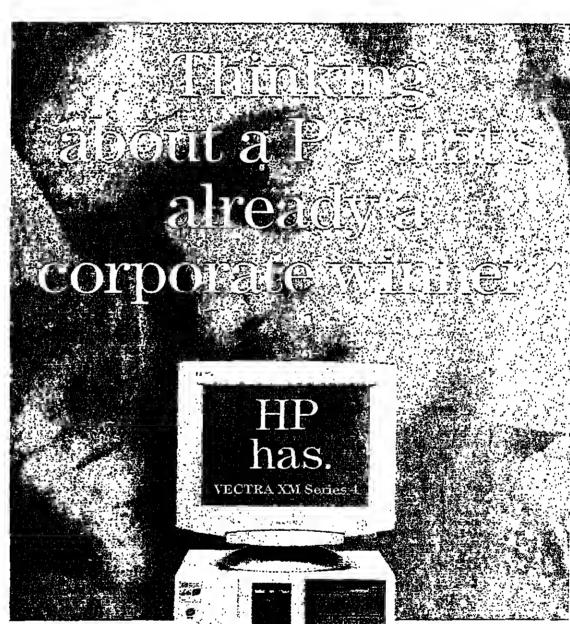
"At Microsoft, we get marketing rights, promote our hrands during championships and get across the Microsoft message that we're oot just about consumer software. We are a serious company for business. And this event is Microsoft software from tip-to-toe."

Mr Trees and his colleagues appear to thrive on the scale of the challenge. Euro 96 will come into being with an impressive inventory of mobile phones, laptop computers and associated software packages that all need to be tracked and

returned after the event. Sema's 100-strong team, to be boosted to more than 1,000 during the event, have created an asset register from scratch. He contends that "building this system from the bottom-upusing completely fresh applications - and the latest computer servers from Digital - has given his colleagues enough

space to get the joh done.
"The exploitation of clientserver architecture, with clus ters of PCs wired toto powerful Digital servers, will deliver IT

Continued on next page



id isaman idalaha kadi balaha 

In April 1996 Personal Computer Magazine gave the Hewlett-Packard Vectra XM4 a highly impressive test-drive.

"Vectra wins: HP's Vectra XM4 gets our vote as the best piece of corporate kit. It is easy to maintain, but can stand up to punishment. HP is a very credible partner... and has a finger in almost every hightechnology pie." PCM also found the HP Vectra far ahead of its peers for compatibility, build quality, maintainability and service and support.

We'd like to add a few more words. Pre-loaded LAN Remote power and extended DMI interface for advanced system manageability. Encrypted passwords and ROM socket for optional ROM-based third party virus protection programmes. But enough of words. Here's a number instead: 01727 811188. Call Basilica Computing today for more details. Because you can't be the best without using the best.

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meersh



Looking aheed to Euro 96: the Sema Group, Digital, Microsoft and British Telecom have developed and supplied the IT solution and business support structure for the European tootball championships. Pictured here at the Footbell Association, London, (left to right, standing) is Adam Wharby of Microsoft, Martin Trees of Seme and David Townsend of Digital. In the front row is Sir Burt Millichip of the Footbell Association with Venessa

Miner of BT and Stephen Clemence, England under-18 player

Company of the Street of the Street

Euro 96 security . By Danny Bradbury

# Troublemakers will face swift police action

While the international TV audience for each match will exceed 200m, the police will be discreetly making their own on-the-spot networked security videos

en police forces in the cameras and send them UK have constructed Britain's largest-ever computerised "football intelligence" operation for the Euro 96 tournament this month.

Police forces including the London Metropolitan Police, British Transport Police, Merseyside, Strathclyde, Greater Manchester. West Midlands and Nottinghamshire constabularies are collaborating on a nationwide digital database which allows them to digitally transmit information on potential troublemakers in between regional centres.

Tha information, including pictures of potential and known troublemakers, can also he transmitted to and from police vehicles located near the 31 matches being played at eight cities across England. Mobile officers using Toshiba Pentium laptops with Photo-

phone software can extract

Continued from previous page:

"If you're sitting in Wem-

hley, you can find out where

the VIPs are in Newcastle -

it's all hubbed around our Bir-

mingham data centre with

The use of a distributed data-

base, essentially eight copies of

the one product held in each of

the participating cities, is key

to the security of the whole

event, explains Microsoft's Mr

Stradling, "The unique thing

about this accreditation is that

takes place across eight locations. Accreditation is about

who's allowed where, rationing

limited amounts of space and

automatic updating across the

eight venues.

'muscle' where it's needed

directly to other mobile units or to a regional site for general dissemination. The project will provide links Into similar systems run by the British Transport Police, Scottish Criminal Intelligence Foothall Unit and the National Crime Information System (NCIS).

Designs for the advanced system began early last year and equipment was distributed in April. The computers were connected up to the Police National Network in May.

The system uses eight Sparc-station 20 workstations (worth £100,000), loaned from Sun Microsystems, running the Crimint database system, supplied by MR-Memex. Information will be transferred over cellular phones from police cars to the Sun computers based at regional intelligence centres. Information can also be transferred between servers across the country using the Mercury

we can issue a new badge from

whatever stadium they are at.

But at the same time we

update the distributed data-

base so there aren't two badges

out there for the same person

The other key aspect of this

system is resilience. With eight

current copies of the database,

Euro 96 gets a level of data

back-up many financial institu-

ment out of thin air and focus-

ing its efforts on a very specific

sector is formidable enough.

Sema knows that it will all dis-

appear within 24 hours of the

a week before the competition

"This outfit came into being

Creating an entire IT depart-

at the same time."

tions would envy.

final whistle.

"If there is a last-minute starts and dies the day after

Euro 96: 'The perfect IT exercise'

change of a person's itinerary. it." is Mr Trees' rather brutal

Mr Trees.

Communications Police National Network Det Chief Supt John Barker,

who is senior investigating officer for Euro 96 at the London's Metropolitan Police. explains the benefits of the system: "It will enable us all to share information about potential troublemakers, known troublemakers and incidents that have occurred which will help us to define how we will approach incidents in each

A typical solution may involve a person who is being disorderly when boarding a trein for a championship venue. Police officers can transmit a picture of the person to a mobile unit at the destination site, which could then observe the troublemaker at the match. In addition, details on the person's history could be accessed by the mobile unit, if he was e known

summary of his new baby's

lifespan, Sema thinks Euro 96

cise...this plays to our forte, tying the latest technology

together and guaranteeing it

He sees three elements in the

Euro 96 package - and two of

them demand an uncompro-

mising approach from the sup-

pliers. "You can't change the

quality - you only get one shot

at the event. You can't change

the timing. It starts on June 8

and if your systems are late for

that, you are in big trouble.

You can change only the

One development at Euro 96

is the advent of live TV graph-

ics, fed from the championship

resources you devote to it."

"the perfect IT exer-

Det Chief Supt Barker emphasises the logistical difficulties of communicating without such a system - "it would have been down the telephone, by fax or telex. We wouldn't be

operating from the same protocols, so there might be differ-ent information stored on one regional system than on another. This system ensures that there are standard protocols with built-in safeguards to ensure public protection".

Mr Paul Oatway, head of the hybrid networks branch within the Metropolitan Police department of technology, says that the Metropolitan force has been "back-populating" Crimint from an existing operational Crimint installation especially for Euro96.

The Metropolitan force has sized the database for Euro96 at 30,000 intelligence reports. "Crimint is a textual intelligence database - and that text can be either in fields of names or attributes of individuals." he says. Pictures will be stored alongside text in the database for transmission.

The systems will be linked to the 12 database from the Cambridge-hased company of the same name. This product allows the police to visualise networkad relationships between people, locations and football clubs.

information system directly

into TV feeds. When a red card

is waved at a pleyer, tha

offender's identity and other

details will be tapped into the

system by Sema, converted

into an appropriete graphic,

and flashed straight on to TV

way a sporting event has

tested the mettle of commer-

cial systems experts: "Tye been

involved in rapid development

of applications before. But this

system needed a hig infrastruc-

ture including all the dedi-

cated telecoms links from BT.

The end-result might look

straightforward, but knitting a

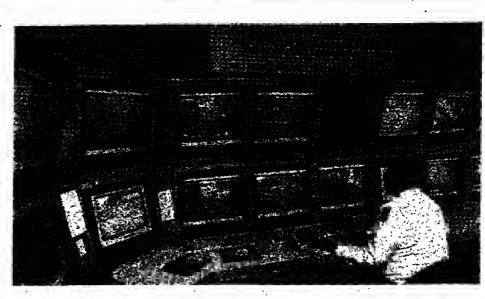
total of 40 local networks

together and creating one

nationwide data network has

been a big challenge."

Mr Stradling sums up the



Olympics' ticket distribution . By Marcia MacLeog.

#### Security command centre

Using video monitors, pictured left, officials at the Olympic Games can monitor and zoom in on any suspicious activities in the Olympic village and at more than 40 different venues in and around Atlanta. The Sensormatic security system includes round-the-clock access control, biometric hand geometry scanners, alarm monitoring and hundreds of mobirosive surveillance cameras to help provide a "secu-rity umbrella" for 2m people attending the event.

### Bad news for ticket touts

The ability to follow any parcel of tickets from collection to delivery worldwide gives organisers and buyers strong confidence in the distribution service

leven million tickets for delivery drivers sign for the tha Olympic Games will he available worldwide. hut even that high number may not be enough to prevent disappointment among lastminute visitors, hit hy a late attack of Olympic fever. Ticket touts will be hoping for a cor-

ner of the market. The anticipated demand for tickets has led the Atlantabased global parcels carrier, United Parcels Service (UPS), oos of the 12 official sponsors for the Games and the company rasponsible for distributing tickets around the globe, to devise a security strategy which would defy

even James Bond. A "closed loop" package tracking system, based on the Delivery Information Acquisition Device (Diad), pictured below, links the UPS global trecking network with the ticket-order database, run hy the Atlanta Committee for the Olympic Games (Acog). This system assigns each ticket order a unique tracking number which can be traced over the UPS system by the carrier's staff or Acog employees.

Each package of tickets is bar-coded and scanned as it moves through UPS's hub-sorting equipment. Location information is fed automatically into the Acog database. UPS ticket package on collection, and record the data on Diad. Diad, used for all UPS collecplayed on the screen. tions and deliveries, is based When a collection has been on hand-held computers which

rounds. The hand-held units are stored in a "base station" overnight to both re-charge their batteries and to receive driver instructions from tha UPS mainframe. When the driver collects his or her handheld unit the start of a shift. the machine lists the custom-

the drivers take on their

ers to be called on that day. Company names, individual contacts and consignmentpackages, each holding 100 Olympic tickets" - are dis-

completed, the driver keys confirmation of the pick-up into the hand-held, noting any discrepancies, such as "only five packages were ready for collection instead of ten". Upon returning to his

vehicle, the driver places the Diad in a Driver Vehicle Adaptor (DVA) to download the collection details into the UPS

The same process is followed for deliveries. The driver



This hand-held computer captures ticket delivery informat electronically, including consignees' digitised signatures

details - for exampla, "ten obtains a list of the day's calls - the list having been downloaded overnight to the handheld computers.

As a driver reaches a delivery site, the bar-code labels on the packages are scanned to enable the shipper's name and number to be entered into the system. The driver keys in the number of packages being dropped off and the time of delivery, and prints the name of the person accepting the

More importantly, the person receiving the goods also signs the hand-held unit with a special stylus to provida a digital signature and proof of delivery. This could prove especially valuable should any Olympic tickets go missing, or turn up in the wrong hands, since the person signing for the package should be traceable.

The hand-held computer is again slotted into the DVA to update the UPS mainframe, providing real-time track-andtrace capability throughout the

package's journey. The ability to follow any parcel from collection to delivery gives customers strong confidence in the service, in the case of tickets for the Olympies, that confidence is boosted by the knowledge that, for the 1996 Games, black marketeers will be the only real losers.





A GROWING BOOY OF NEW TECHNOLOGY FROM THE G.R.A. THE GEORGIA RESFARCH ALLIANCE IS AN ECONOMIC PARTNERSHIP OF GEORGIA'S RESEARCH UNIVERSITIES,

BUSINESS COMMUNITY AND STATE GOVERNMENT. ONE PROGRAM, CREATED BY OR, FRAN TEDESCO, HAS

OF MILES AWAY. THE NEW YORK TIMES CALLS IT "THE MOST SOPHISTICATED DEMONSTRATION IN THE COUNTRY".

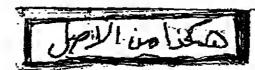
A MIND THAT CAN SEE INTO THE FUTURE. OR RAO TUNHALA HAS THE VISION TO SEE WHERE TECHNOLOGY IS GOING, AS WELL AS THE CAPACITY TO GET IT THERE. THE HOLDER OF 21 PATENTS AND THE CREATOR OF 46 OTHER THYENTIONS, OR. TUNMALA DIRECTS A RESEARCH PROGRAM AS PART OF GEORGIA'S

ADVANCED COMMUNICATIONS INITIATIVE. FIS WORK DEVELOPING HIGH-PERFORMANCE, LOW-COST MICROCHIPS

THE ENTREPRENEURIAL SPIRIT OF TED TURNER, CHAIRMAN AND PRESIDENT OF TURNER BROADCASTING SYSTEM. WHAT BEGAN IN 1970 WITH A SINGLE ATLANTA TV STATION IS NOW A GLOBAL COMMUNICATIONS COMPANY - AND THE WORLD'S LEADING SUPPLIER OF ENTERTAINMENT AND NEWS PROGRAMMING INCLUDING CHA AND THE VISIONARIES SUCH AS MR. TURNER, OR. TEDESCO AND DR. TUMMALA PERSONIFY THE KIND OF ENERGY AND THINKING THE GEORGIA RESEARCH ALLIANCE WILL BE SUPPORTING INTO THE 21ST CENTURY.

Georgia Department of Industry, Trade & Tourism

FOR INFORMATION, WRITE: GEORGIA, DEPT. FIN-BMS, P.O. BOX 1776, ATLANTA, GA 30301, USA; OR VISIT US AT http://www.grz.org



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Olympic communications system ATLANTA -03 Mg. BEACH VOLLEYBALL 8 8300 mobile and portable radios 6,000 alphanismeric pagers 1,100 pelistar telephones 1,1500 computer moderne SOFTBALL THE OLYMPIC RING Georgie Dome VOLLEYBALL 1 1 2 Y 1 7 Y 1

AND THE PROPERTY OF THE PROPER

Communications at the Olympics . By Michael Wiltshire

### System serves 70,000 staff

otorola, the wireless communications company, has huilt the largest-ever two-way radio system for a peace-time event for use in this summer's Ceoten-

nial Olympic Games. The digital network has been designed to meet the needs of up to 70,000 staff and volunteers with a wide range of responsibilities - from security and event management to transportation, medical support, event scoring, timing, judging and proving catering

Motorola's support for the Olympic movement goes back

tions system has taken four years to plan. Mere Gilmore, executive vice president of Motorola, says: "The event requires an unprecedented range of wireless technology. In 1972, we equipped just a handful of coaches with two-way radios - today we are meeting the needs of tens of thousands of staff and volun-

Various Olympic sites in the greater Atlanta area are linked with Motorola's "SmartZone" technology to give wide area connectivity. For example, a user in Stone Mountain Park is able to speak to a user 16 miles 24 years. The new communica- away in the Olympic stadium.

The network also links with public safety agencies, allowing staff to interact with lawenforcement and emergency services. The system also supports 10,000 portable and mobile radios, 6,000 alphanumeric pagers, 1,500 cellular phones and 1.500 computer

The Olympic Torch Relay began in the US on April 27 when the torch arrived in Los Angeles from Greece, During the relay, Motorola is supplying communications with two-way radios, cellular phones across 42 states, prior to the lighting of the Olympic canddron in Atlanta on July 19. Computer-aided design

### Race to win the technical edge

cost of design and compresses development times in many areas of

rom the simplest tennis racket to the most advanced Portrait advanced Formula One race car, powerful computeraided design (Cad) software is now an essential weapon in sports where victory may hinge on a slim technological

sport, writes

Geoffrey Nairn

This is what the US Olympic cycling team will be hoping this summer in Atlanta, where its revolutionary SuperBike II track hicycle will compete for the first time. The bike was designed by US firm GT Bicycles using CADDS 5 software from Computervision and is claimed to be the fastest, most aerodynamic hicycle hnilt to

SuperBike II is the result of four years of intense research and development focussed on building the ultimate track bike - "every little piece, even the chain, was looked at," says Forrest Yelverton, R&D director of GT Bicycles.

The chain was ultimately left unaltered but all other components have been redesigned using CADDS 5 software running on Sun SparcStation workstations. The goal was a more aerodynamic bike, yet one that could also stand the heavy stresses of high-speed pursuit races.

According to Mr Yelverton, the CADDS 5 software played a key role in allowing GT to model and manufacture the carbon fibre monocoque frame. "The 'organic' surfaces are so complex that you can't draw them on paper and give them

to a machinist," he says. CADDS 5, like other high-end Cad/cam packages, supports "parametric" modelling, which means the shape of compo-nents are expressed as mathematical equations rather than as absolute measurements. This allows complex designs to will make three, six and 12-be easily and rapidly tried out hour predictions, using an IBM

Software lowers the on screen by changing parameters in the formulae, so reducing the need to build physical

> GT Bicycles also uses the parametric modelling capabil-ity of CADDS 5 to scale up or down the designs of its mass-production bikes, so offering

The sophisticated modelling capabilities of today's Cad/cam packages reduce the need for coatly and time-consuming reworks later in the manufacturing cycle, so lowering design costs and compressing development times.

"Our husiness used to be

prototypes. For SuperBike I, a metalframed predecessor to Super-Bike II. parametric modelling allowed GT Bicycles to build a radically new hicycle in less than six months, completing it in time for a key race. With conventional methods they would have missed the deadline, says Mr Yelverton. Just one prototype was made and it worked so well it was used as a

consumers a range of differ eot

about accuracy - now its about



- the result of four years of research and development

reducing time-to-market," says be made in the two weeks that Jim Duncan, UK general manager of EDS Unigraphics, the Cad/cam division of the EDS co

mputer services group. Tighter development cycles affect many industries, but in Formula One racing lead times are punishingly short. Teams have 14 weeks to design, build and test a new car before each season and modifications must separate one race fro m the

F1 cars must meet technical regulations designed to improve drivers' safety but also ensure the thrilla and spills remain in the sport. A leading team such as Beoetton, which uses Unigraphics Cad software, may redesign 70 per-

cent of the 3,500 components in

its cars from one season to the next in an attempt to exploit rivals might say cheat - the rules and achieve a technologi-

cal edge. Powerful Cad cam software bas become essential to F1 teams, "We literally don't have a drawing hoard here," says Richard Taylor, design eogi-

Continued on next page

■ Weather forecasting • By Geoffrey Wheelwright

# Around-the-clock predictions

New software system ensures high accuracy for Olympics weather forecasts

sing advanced meteorological software developed at Colorado State University, the National Weather Service in the US aims to provide the most accurate weather forecasts for the Olympic Games in Atlanta this

Using IBM's "visualisation data explorer", meteorolgists will see weather data in two and three dimensions, thus enabling them to provide highly detailed predictions. The Olympics' weather service

system. These forecasts will be posted on the internet home

pages of Olympic Games, the National Weather Service and IBM's own home page on the Internet, Weather data and graphics will also be available to games attendees and staff via IBM information kiosks located throughout the Olympic villages.

Apart from the localised weather services in Atlanta this summer, Internet users in the US who are planning sporting holidays can now find easier ways of checking the weather across the country thanks to services such as the one run by the Weather Channel on US television and Its World Wide Web site (http:// www.weather.com/\

The Weather Channel is a 24-

30-node RS/6000 SP computer hour, seveo-day television network devoted entirely to weather predictions. First broadcast in 1982 to a national audience of only 25m homes, the Atlanta-based network now hoasts that it is seen in over 60m cahle households. At any moment throughout the day, tological and meteorological more than 130,000 homes are

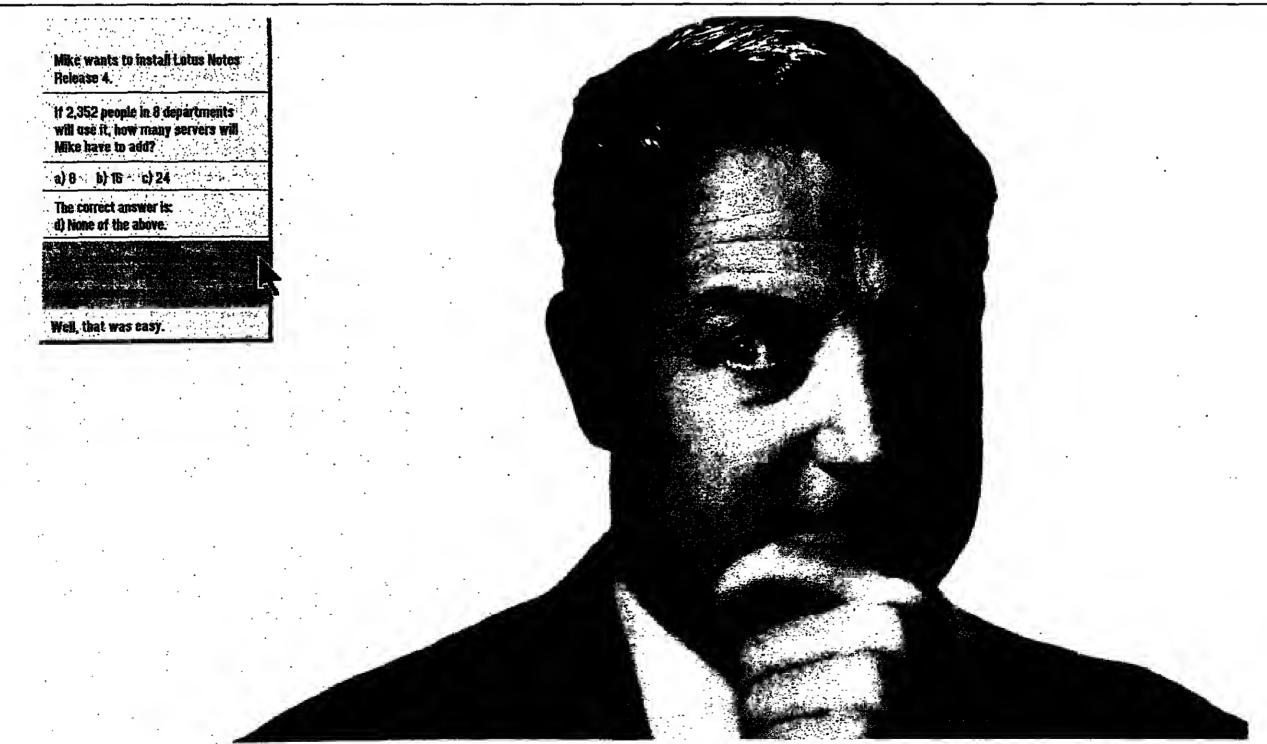
> The network broadcasts local daily forecasts for more than 4,000 National Weather Service zones across the country. However, regional and national forecasts are only part of the Weather Channel's programming - the network also offers special interest forecasts targeted to viewers with specific weather needs including general aircraft pilots, skiers, frequent flyers, gardeners. private craft sailors and

watching the channel.

cross-country drivers. Documentary programmes from the Weather Channel also explore environmental issues such as the greenhouse effect. the psychological impact of natural disasters, the world water supply, plus other clima-

issues. The immediate real-time relay of severe weather watches and warnings is the most vital service provided by the channel - in both its TV and online electronic form. Information from the National Weather service is delivered to the network through complex

satellite and computer links. The Weather Channel has recently added facilities to monitor daily earthquake updates, local emergency warnings and other meteorological information services.



Can your Notes do this?

While Lotus Notes Release 4 can be the answer to your collaborative computing prayers, it can also raise some

important questions. Like how many servers will you need to handle the added users Notes Release 4 supports? Fortunately, there's a rather simple solution: the RS/6000 Notes Server.

By consolidating your existing servers with the UNIXbased RS/6000 server, you can take on more users without bringing in more servers. And because the RS/6000 offers unsurpassed scalability, your business can grow with it, not

What's more, the RS/6000 Notes Server lets you

manage your entire network from one location, reducing the need for additional resources and staffing. Of course, you won't be left to work things out on your own. Our RS/6000 specialists will help you design a customised solution that best meets your collaborative computing needs.

How can the RS/6000 Notes Server help your

company get more out of Notes Release 4? For the correct answers, visit us on the Net at www.rs6000.ibm.com or call Lorna Newman on 01705 49 21 49.



points out, the data streaming

from the car needs to be avail-

able to all the team, and in

readily understandable form.

Whether for instant analysis

track-side, or for usure later

within the main database, such

informational represent the

fundamental "building blocks"

ft is on race weekends that

the importance of IT becomes overwhelming. Drivers and engineers need to know, pre-

cisely, every aspect of the car's

performance. Such is the sophistication of the equip-

ment that every section of the

track, how quickly the driver

passed through it - measured by suspension loadings, yaw

angles, gears engaged and the shifting patterns of engine revs

and power - is mapped in min-ute detail. The data can be

compared between lans, the

team's cars and each team

in development of the car.

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ing engir Yet BE ambition tion. "It somethi from BI analyst The co lysts vi month, BBA: formed market month:

Cad firmly compa

MARKET REP

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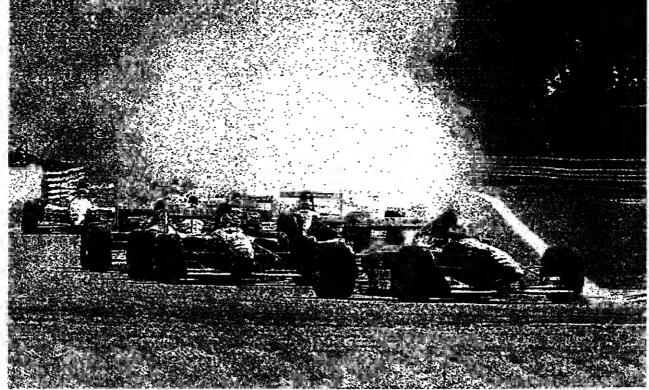
# Capt. Kirk would be impressed

Grand prix cars are now 'test-driven' on computers before they are built. On and off the track, the electronics are so advanced that some observers ask if grand prix is really a sport at all

ere they to wander into the pit lane garage of a grand prix motor racing team on a box were designed and built using acquired experience and expertise. But each new car was then mainly based on race weekend, even Captain Kirk and the flight deck crew of that endless space 'soap' Star Trek would be impressed.

The banks of video monitors and computer screens flicker and constantly change. Before silent and intent as any on the Storship Enterprise. The streams of incoming telemetrised data, however, concern not make-helieve aliens bot vital information on the mechanical health, dynamic behaviour and stress loadings which will determine success or failure for the half-tonne, 700 horsepower projectile which is a modern Formula

Less than two decades ago, even grand prix, the pinnacle of motor racing, was of the genus known as "suck it and see". The car, engine and gear-



every nervous lift of the throttle before a bend . . . all revealed by a philess stream of computer printouts and bar charts

"seat of the pants" feel, that real performance will be measured against the computeraided design, simultaneous

engineering, computational fluid dynamics, finite element analysis and host of other ITbased techniques by which the car was created. It should thus come as little

surprise that, given this level of complexity, a leading grand prix team will employ 150 or more people, perhaps 70 of whom will travel to the 16

grands prix scattered each year around the globe. Nor do lead-ing multinational sponsors expresa surprise any longer that Jackie Stewart, for example, estimates that he will need a budget of approaching £30m a year to run the new grand prix team he is setting up in partnership with Ford to take to the tracks in 1997. Some question whether this mechanical and electronic maze makes

grand prix or its North Ameri-

can equivalent, indyCar rac-

ing, a sport at all. Geoff Banks, sponsorship manager of computer systems group Hewlett-Packard, which provides support to the Benetton and Jordan teams in grand prix and Bobby Rahal's indyCar Team Rahal in the US, insists it is - "for about 90 minutes, and just on race weekends."

It is undeniably a sport with difference, depending as it does so heavily on a team's ability to source, develop and utilise the latest available tech-

Technology does not have all the answers

nologies in order for the human resource - Messrs Michael Schumacher et al - to function at its full potential.

The full application of IT to motor racing has more facets than might be immediately obvious to anyone not closely familiar with the activities of Computervision, H-P and other IT companies closely involved with the racing scene.

The use of computer-aided design and manufacturing technologies has a more urgent

built modern grand prix car importance to a motor racing starts much higher up its team than even mainstream potential performance 'envevehicle producers. A grand lope' than its forebears. But It prix car's body tub moulding. nevertheless requires susits suspension parts, even occatained on-track development to sionally major items such as shave away the tenths and hundredths of seconds which transmissions, mnst be brought from first concept to can prevent o team's drivers roll-out in the space of a few from reaching the podium. months, or even weeks. Nor does this process take place in For this, data acquisition isolation. Even within this systems - telemetry - is essen-tial. As H-P's Geoff Banks

Without IT, today's motorsport teams are lost, writes John Griffiths

short timescale, flexibility must be built in to allow a sudden change of design criteria - such as a new safety requirement or other change of

Race teams are mora demanding, too, of the lT equipment ltself. Ford can bring to production readiness a road car using design and engineering staffs at office desks and permanent work stations either its own or those of major components or services suppliers. A grand prix design and development engineer is just as likely to need to access the team's main design and engineering functions from the workhenches of a small apecialist supplier, a windtunnel or even the blustery side of a racetrack. Sophisticated laptops, palmtops and miniaturised fax and data modems are the required order of the day. CAD, CAM and other IT

might mean that the freshly-

For the driver, it's all potentially bad news, for IT is the land of no excuses. Every mistake, every nervous lift of the throttle before a bend - all are laid bare by the pitiless stream of digits and bar charts. But for engineers, designers and team managers, it is the meat and drink of decision-making.

Without IT, a team is lost.

### Race for winning designs

Continued from previous page

neer with the Jordan Grand Prix team.

Jordan uses Precision Engineering Cad software from Hewlett-Packard running on HP 9000 workstations. While most of the design work is done in two dimensions. 3D is being increasingly used, particularly for modelling surfaces whose aerodynamic performance is critical. in the past, craftsmen built moulds for these surfaces using schematic

"But by creating the 3D surface on computer we eliminate the buman error in inter preting the drawings," says Taylor.

Details of every component are stored on the system, making them readily accessible if a car has in be modified in a hurry, for example, During the 1994 season, teams had just two weeks to implement significant design changes imposed by the sport's governing body following a spate of fatal crashes.

F1 racing may have the highest stakes and higgest budgets. but other sports are increasingly technology-driven. Manufacturers of golf clubs, rackets, skis and snowboards, for example, use new composite materials - and Cad/cam software to design lighter, better performing equipment.

Cad systems are also being used to plan sporting events. The new Olympic Stadium in Atlanta, for example, can seat 85,000 people. But not all seats have an equally good view, so IBM used Cad systems running 3D visualisation software to determine which seats justified bigber-priced tickets and where to place TV cameras. Computer generated renderings showed architects and organisers how the fioished stadium would look before it was built - and how It will appear when converted to a basehall park after the Olympic Games.

■ Monitoring performance . By John Griffiths

esplte the huge lead Damon Hill had built up in this year's Monaco grand prix, he had so desperately wanted to win, he knew the attempt was doomed long before the engine of his Rothmans-William-Renault cried 'enough'

"paper" theory. Not until a

driver strapped himself in and tried it out for the first time

could it be known how well the

overall package worked, and how radical the adjustments to

suspension mounts and set-

tings, weight distribution and

other factors needed to trans-

form a car to front-runner from

already starting to take shape in the mind's eye of people such as Ferrari chief designer

John Barnards, Williams' Pat-

rick Head and others will have

been designed, engineered and even test 'driven' on computer

before any significant amounts

And even when the car is

finally rolled ont on the track,

it will he via dozens of on-

board sensors and telametry.

just as much as the driver's

of metal are cut.

The 1997 grand prix cars

also-ran.

passing sentence, the telemetry had told him - and the englneers in his pit - that there could be no reprieve. And noone doubted its word.

There was no point. It spoka with the authority of 100 elec-

Moute Carlo. Even in the Hill pit, no-one wants to shoot the IT messen-

On the race track, electronic sensors monitoring every engine function, sending hard data from car to pit

Like an implacable judge of 'no hope' it provides, over the course of a season and over all the teams, hundreds more that warn in time of mechanical problems ahead - and allow corrective action before catastrophe. Snch telemetry - once

tronic sensors; monitoring every engine function: streaming not bopes or fears but hard, cold data from car to pit. Simultaneously, other telemetry streams were conveying their tales of woe, or 'all's well' or - most crucially - warnings to teams still surviving the mayhem in the streets of

ger, because for every message an idea of its complexity: The data outputs from all the engine sensors are captured by the engine control unit (ECU). itself pre-programmed to send relevant material to the moni-

tors in the pits.

Tha raw information is also sent to a data storage unit in the cockplt which is both a two-way to the extent that grand prix cars by now could data-logger and communicahave been driven by remote

aboard, had not the FIA govhe data sinred here is erning body curbed lt - covers able on each pit visit and, transferred to a PC, can all the operating functions of a But an examination of just instantly expand on a problem the system for the engine - in which may have been shown this case, the Cosworth unit of up in outline on the telemetry. The communications control-

sends the telemetry data via a radio transmitter in one of the car's sidepods. It is received by a large antenna in the team's garage, linked to four receivers which, in turn, convey the data in a mainframe computer.

A second large aerial transmits important data to Cosworth engineers on the plt wall, where three more computers decode the data for display. Monimring the screens, the engineers, detecting a problem, can instantly tell the driver to pit or turn the engine

The mainframe stores the highly detailed, extract- data on disc for debriefings and future planning.

Each of the two team cars also has a separate, dedicated monitor. On this display, engineers read data displayed in

ler of the data storage unit or in graph form for full examination later. Just a few of the parameters surveyed include oil and fuel pressure, oil and water temperature, engine rpm, fuel consumption, gear slected and speed.

A PC is used to re-programme electronics in the car where deemed necessary, a complete reprogramming taking a mere two minutes.
It all sounds almost fool-

proof and highly complex, and it is - particularly when multiplied by the data streams involved in the setting up of suspensions, corner loadings and all the other dynamic paramatera of performance beyond the engine.

Happily, however (at least in the view of some), it also remains one of motor racing's enduring attractions that even when showered with today's state-of-the art IT technnology. cars can still confound their designers and infuriate their

None of the current crop of grand prix cars, in truth, ever comes new "out of the box" fundamentally unrellable, or

handling, in racing parlance, "like a pig" - despite what a disaffected driver might say.

But the fractions of a second per lap which now usually mark out the winners from the also-raos, and which over a whole race can build into halfminutes and balf-miles, clearly - as the race results repeatedly show - can continue to remain frustratingly elusive for some of the best-run and best FTequipped of teams.

Technology does not have all the answers.

■ Team support • By John Griffiths

## IT partnerships with motorsport

thing far more meaningful than a few high-profile hardware outlets for IT companies such as Bracknell, Berkshire-hased Hewlett-Packard and Coventry's Computervi-

For HP, and particularly its

Service and Support division, its involvement with the Jordan team in grand prix and the Rahal team in IndyCars, provides stiff ongoing challenges to its technological, logistical and service capabilities because of the uniquely stressful, rapid-fire responses demanded in motor racing's highest echelons. And in doing so, it provides HP - as indeed, it does Computervision and other related rivals - with a perfect, global showcase for those capabilities. HP's ability. as an "insider", to usher guests mostly senior executives of clients or would-he client companies offering big husiness

otor racing bas potential - discreetly and evolved into some mobstructively into the teams' pit lane control centres at the 16 grands prix all around the world "is worth hundreds of site visits", says Geoff Banks,

control, with no drivers

the Ford-Sauber team - gives

grand prix car.

was a logical choice for what. Banks makes clear, is very much a partnership. HP pumps no conventional "sponsorship" money as such into one of grand prix's youngest teams.

the world a team member can combine a GSM or satellite phone with a laptop or palm-Jordan was already using

HP's sponsorship manager. Jordan, based at Silverstone,

hat it does do, he adds, is provide a wide variety of hardware, software systems and "24-bours-a-day, seven-days-a-week support for the team, whether at the Silverstone headquarters or anywhere in

HP's ME30/ME10 systems for the design of its cars and HP hardware for its telemetry. And Hewlett-Packard France is a long-time associate of Peugeot, the French vehicles producer whose engines power the Jordans. No less appropriately, Eddie Jordan's team was 'born' with IT-only systems - "I think it's the only GP team that has never had a drawing board." says Banks. "F1 reaction times are miniscule, so it's a perfect training ground for a whole range of products and solutions. It also requires us - HP

and Jordan, as a team - to be proactive and to plan ahead. Hardware on its own is not a Support means using any and ever system at hand. When everyone left for the this year's opening grand prix at Melbourne, for example, it was found that some key software had been left behind at Silverstone. HP located lt, compressed the data into an e-mail

and sent it via the Internet

example of the meaning of pertnership, Banks points out, hut nevertheless a pertinent

Joint planning with the team is rigorous: "With any company you've got to know where you're going to be; but F1 is moving goal-posts all the time, so you have to update all the

ne of the biggest steps forward has been the introduction of the 600 CT Omnibook portable PC to the team. Lighweight, it can communicate with a host computer via infra-red, seod faxes. eveo do trackside development, loaded with the ME10 designer software, which enables the creation of the 3-D images of 'virtual' cars which can he wind-tested, altered and con-

tinually enhanced. In short, says Banks, "you've got a mobile design office at the circuit - and you can redesign in the pits".

■ Electronic cash at the Olympics . By Rod Newing

Tisa international (Internet address: http:/ /www.visa.com), a worldwide sponsor of the Olympic Games, has chosen the event in launch the largest trial of electronic cash in north America.

"We can test the technology and 'showcase' it to four million consumers visiting the event from around the world," explains Stephen Schapp, Visa's executive vice president for products and marketing. Electronic cash uses a

plastic smart card with an embedded microprocessor capable of executing transactions and storing balances. 'VISACosh' cards will be available in \$10, \$20, \$50 and \$100 denominations from First Union Corporation, NationsBank and Wachovia. the participating banks. where they can be also replenished. They can also be purchased from

card-dispensing machines in banks, shopping centres and some merchants. VISACash will be accepted for purchase of food and beverages at the main stadium venues and the Olympic Village. The new cards may also be

used at 5,000 terminals in 1.500 locations in the Atlanta

### Milestone in the history of money

Visa choses the Olympics to launch a large trial of its electronic cash systems

city area's fast food outlets. gasoline stations, convenience stores, cinemas and ratiway

Users insert the card into a terminal which displays the balance, then the customer confirms the amount of the transaction by pressing a button and the cash is transferred. The new balance is then displayed. Electronic cash offers advantages in speed of transaction and the ase of carrying value. For businesses, it offers a dramatic reduction in the cost of handling cash, which is estimated at £4.5hn a year in the UK alone.

games. Other trials of VISACash are proceeding in Argentina, Canada, Columbia and Australia'a Gold Coast Spain is the closest to commencing a national roll-out of VISACash. The system complies with an international standard agreed

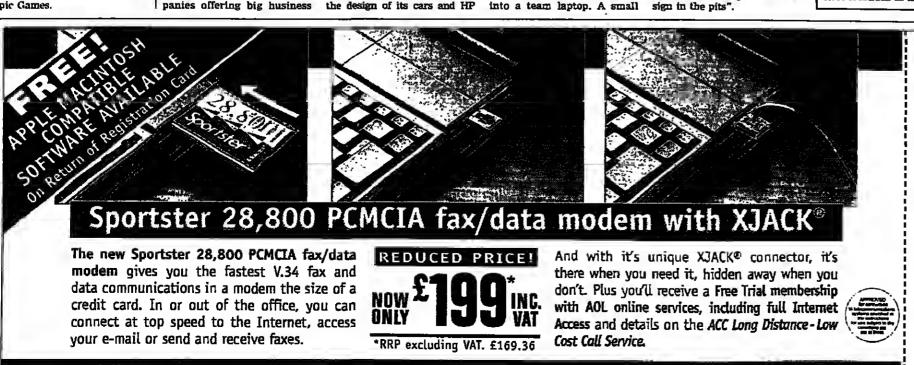
The trial continues in

Atlanta after the Olympic

with MasterCard and Europay. A large-scale pilot of Mondex, NatWest's equivalent technology, has been running in Swindon and is due in be extended throughout the UK

"This is a milestone in the history of money," says Schapp, "We have been using coins for thousands of years, but we now have the technology to replace it with electronic stored value. This trial is the first step towards implementation a relationship card, which will give users worldwide secure and portable access to a full range of financial and payment

The microchip in the card will allow the user to carry out credit transactions, make dehit payments, store value with electronic cash, provide the ability to carry out secure transactions on the Internet, provide electronic banking and allow users to replenish their electronic cash, he says.



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650 WHARFOALE ROAD, WINNERSH, WOKINGHAM, BERKSHIRE RG41 5TP. TEL: D1734 228200 FAX: D1734 695555 47

■ Prospects for network computers • By Louise Kehoe

# The NC debate intensifies

Larry Ellison, chairman of Oracle, has touched a raw nerve in the personal computer industry with his charges that the ubiquitous desktop computers are too expensive and too complex to use

he era of the personal work appliances, thin clients computer "ia almost over and the era of the network computer is about to begin." says Larry Ellison. chairman and chief executive of Oracle and the chief promoter of the "NC", as he calls

Predicting the advent of a new information technology "megatrend", Mr Ellison has captured the attention of the computer and software industries as well as millions of computer users worldwide with his promise of \$500 computers.

When Mr Ellison began his

NC campaign last year, prominent leaders of the PC industry scoffed. Bill Gates, chairman of Microsoft, called the NC "a stupid idea" that would "never happen". Michael Dell, Dell Computer chief executive, referred to it as a "back to the future" concept, implying that it turned back the clock to the days of centralised mainframe computer systems.

Over the past six months. however, Mr Ellison has wooed NC supporters from the software, consumer electronics and computer industries. Last month at an NC rally in San Francisco, more than 50 companies including Apple Computer, International Business Machines, Netscape Communications and Sun Microsystems

ship of a personal computer to

the business environment can be as high as \$40,000.

I turers who are working hard to

are therefore targeting the on-

going cost of supporting a

desktop computer over its life-

lime to produce a competitive

advantage over personal com-

The network computer (NC)

is designed to be as simple as

possible, with no bard disk,

CD-Ram or floppy disk drive.

The essential components of a

network computer are well

proven and reliable, including

processor, motherboard, mem-

ery, network card, monitor.

However, the real cost-sav-

ing lies in the lack of local

software, Sun's JavaStation

has no operating system,

downloading instead a Java

"virtual machine", which is a

compact piece of software code.

A virtual machine can be writ-

ten to support a device from

any manufacturer. In the case

of IBM, researchers are experi-

menting with several different

operating systems, but they

helieve that users are not both-

ered about which system they

The user downloads a

browser which allows them to

connect to whatever software

and data they need. This is

likely to be a client for a

keyboard and mouse.

IBM and Sun, two manufac-

endorsed NC standards. At the heart of the debate over NCs - also known as net-

**HISWers** 

ne in the

of money

or network terminals - are contrasting views of the future role of the Internet and private corporate "intranets".

While there is broad agreement that Internet standards. which enable computers of all sorts to communicate and sbare data, represent a sea change in information technology, the industry is divided over what this will mean for individual computer users and how quickly change may

#### Competitive interests

Fueling the debate are the competitive interests of some of the world'a largest software and computer companies. There is nothing that Mr Ellison would like to eee more than to have arch-rival Microsoft loose its grip on the personal computing software mar-

Similarly, it is to the benefit of companies such as Netscape and Sun Microsystems - the largest providers of Internet software and servers - to promote the use of the Internet. In contrast, Microsoft and

companies auch as Compaq Computer that have flourished in the PC market clearly have a vested interest in preserving the status quo. Mr Ellison maintains that

■ Network computers in the corporate environment • By Rod Newing

server as possible, leaving a "thin client". It could also con-

. nect to a front end to a legacy

The software is loaded into

from the network each time

the device is used. This means

that administrators can man-

age software distribution cen-

trally and users will automati-

cally have the latest version of

the software. Because there is

no floppy disk or CD-Rom

drive, security and back-up is

handled centrally by the net-

work, further reducing support ...

un are developing eight

devices at present. The machine aimed at the

corporate market is called the

"JavaStation" and will be

available later this year,

although no firm date has been

announced. The prototype

shown to the press was fitted

inside an external disc drive

but was taking up about half

The JavaStation will sell for

\$750-1,500, including a monitor,

against a typical PC at \$2,000.

However, Sun are claiming "near zero" administration

costa - "the JavaStation

reduces support costs, provides

more security, reduces the cost

per seat and distributes appli-

catinns automatically," saye

Martyn Lambert, the director

hox, the size of a large novel

the space inside.

Network computers may offer corporate

crording to research by full-blown business applica-the Gartner Group, the tion, which will have moved as

lifetime cost of owner- much functionality back to the

produce network computers, the memory by downloading

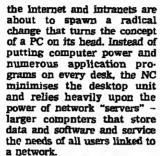
users a big cut in the cost of ownership

compared with personal computers



**Directions** 

**Business strategies** for the network-centric computing era



In the corporate setting, the NC could be linked to an office local area network. For the computer at home, the NC would be hooked up to the

PCs are too expensive and complex, Mr Ellison maintains, With the NC, he says, "the complexity is moved out of the appliance and back into the

Rod Newing test-drives a prototype of the Sun JavaStation - the small

systems strategy at IBM. "We

will provide hassle-free com-

puting, because people just

the user can take it out of the

hox, install It and use it with-

out support from the IS depart-

ment. We can save 25-30 per

cent of the cost of ownership

because in a network-centric

environment, clients are easier

to manage and more cost-effec

tive. Reducing the lifetime cost

"We are at the start of a

major change in platform, from

386,486 to Pentium or Pentium

Pro and from 16 bit in 32 bit

will give corporates a competi-

tive edge when they make this

is key priority to large corpo-

rate customers.

want to use it. We mean that

box in the foreground- which is aimed at the corporate market

of Sun's new Networking Busi-

IBM has investigated 15 pos-

sible network computer

devices and has narrowed its

choices down to seven. These

include at least two for use in

of these is designed to reduce

space on the desktop by incor-

porating the computer into the

monitor casing. A number of

prototypes of this design have

already been sold to a leading

IBM are emphasising the

ease of use of a network com-

puter when compared with a PC - "IBM is in the informa-

tion business, not the hard-

ware husiness," says Ozzie

Osborne, vice president of

corporate customer.

a corporate environment. One

ness Unit.

Kick away those support costs

Sison: champion of the network comp networks." He draws an analogy with television cable networks and telephone networks which are "enormously complex, but the devices that bring

He has demonstrated prototype NCs built for less than \$300 and he promises that NCs selling for only about \$500 will be widely available before the end of this year. While he does not see NCs replacing PCs, he predicts that NC sales will outstrip those of PCs by the end of

are inexpensive and easy to

From Mr Gates perspective, however, the Internet and corporate networks are facilities that extend the capabilities of PCs, rather than displace



Macintosh," he says. these services to individuals Mr Gates argues . moreover.

the decade.

extend standards and technologies coming out of the Internet and provide great implementations for the PC and (Apple)

that NCs have two significant drawbacks. First, he points out, NCs will not run the plethora of PC software that is in use today. "The world has more than 150m users of Windows, and there are 5m people developing Windows software . . . Microsoft's strategy rewards, rather than discards, the investments these people and companies have made."

Secondly, he argues that NCs will require broadband networks in order to access programs and data stored on remote servers at an acceptable speed. "The machines may find a place in the corporate

transition," be believes.
Sun expects to sell about

300,000 units worldwide in 1997.

all into the corporate sector.

They will target the retail and

bealtbcare markets, where

JavaStations can provide small

sbops, dentists or doctors with

access to central servers. They

also expect the financial ser-

vices sector to be attracted by

the cost saving potential in

their highly competitive sector.

However. Sun has another rea-

son for promoting the network

double the number of servers

PC in a corporate environment

is very much dependant on the

design of software," says Tre-

vor Salomon, marketing and

business development manager

at SAP (UK), who have already

announced support for the

Internet and Intranet with

their R3 auite of business soft-

going to have problems, but

those with thin clients will be

able to provide tremendous

advantages to the customer.

We are still pioneering, but

corporate users won't just buy

network computers because

they are cheap. They will want

to be convinced that their

applications will be reliable,

secure and fast, as well," he

Network computers have tre-

mendous potential, but their

entirely on user-reaction - "we don't know what the killer

applications will be," says Mr

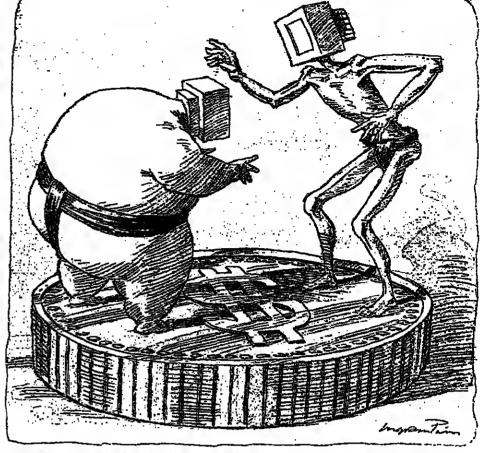
Osborne, "but the network-ceo-

accommodate it".

"Vendors with fat clients are

The success of the network

they sell.



The struggia to cut costs: new slim-line and easy-to-use "network com appEances, thin clients or network terminals - will sharply reduce the "cost of ownership" of a desiston mputer in the corporate arena, claim the NC's ardent supporters

marketplace, where intranets are becoming vital and broadband networks are fairly cnm-

mon," he concedes. However, network terminals will find less acceptance in homes, where narrowband and midband connections (such as ISDN and cable modems) to the internet will be the rule for several years," Mr Gates says. Even some of the avowed

supporters of the NC agree in part with Mr Gates' assessment. IBM, for example, is focusing its initial NC efforts at the business marketplace,

rather than consumers. "We are absolutely certain there is a place for NCs in business. We suspect that the consumer market will develop, more slowly," says Phil Hester, general manager of IBM's Inte-

■ NC development • By Paul taylor

### Advent of the Acorn NetSurfer

The network computer has provided Acom with a coherent strategy, based on the network concept, and raised the

L work computers came man of Oracle, much of the design and development work computer, in that they want to has been undertaken in the UK by a handful of small technology companies including Cambridge-based Acorn Computer and Eidos, the video technol-

ogy specialist. Acorn, which won a contract and portable models, plans to

sion technology, which will be made available to all NC developers, is expected to form part



Quick to market: Acom Computer's Internet device, due out this autumn

#### has "no interest in the consumer market," says Gerald Youngblood, chairman and chief executive. SunRiver will include a Windows NT-compat-

group's worldwide profile

lthough the impetus for computers, including desktop the development of netfrom Mr Larry Ellison, chair- nies to sell a network com-

in January from Oracle to design a family of network

become one of the first compaputer while Eidos bas agreed to provide video compression technology for Oracle's own device, the Oracle Network Computer. The Eldos' video compres-

Continued on page 9



tric model is flexible enough to is likely to cost less than \$500

#### ing PC applications software. Challenge for NC

grated Product Solutions

In the corporate arena, one

of the main attractions of the

NC will be that it sharply

reduces the "cost of owner

ship" of a desktop computer,

says Mr Hesier, According to

industry studies, PCs linked to

office networks cost as much

as \$12,000 a year to maintain.

support and upgrade. NCs could cut this cost by 25 per

Similarly, SunRiver the world's second largest manu-

facturer of computer terminals, aims to become a leading producer of NCs. But the company

ible version of the NC in its

range of new products, says Mr

Youngblood, because the com-

pany believes many businesses

will want to keep using exist-

cent or more, IBM believes.

manufacturers Most NCs, bowever, are expected to run applications written in Sun Microsystems' Java programming language and stored on network servers. A significant challenge for NC manufacturers, therefore, will be to encourage the development of Java application programs that mimic the functions and appearance of

popular PC programs. Supporters of the NC may be promising too much, too soon industry analysts warn. It will take time for NC software to be developed for the business market, and still longer for high handwidth networks to reach consumers' homes in

Nonetheless. Mr Ellison has touched a raw nerve in the PC industry with his charges that the ubiquitous desking computers are too expensive and too complex to use. Already: the threat of competition from NCs is spurring efforts to develop lower-cost and easier to-use PCs.

Larry Ellison will be bring a keynote address at this Friday's Landon symposium an the future of desktop computing: see details on page 10

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By Steve Thom UK Stock Mark

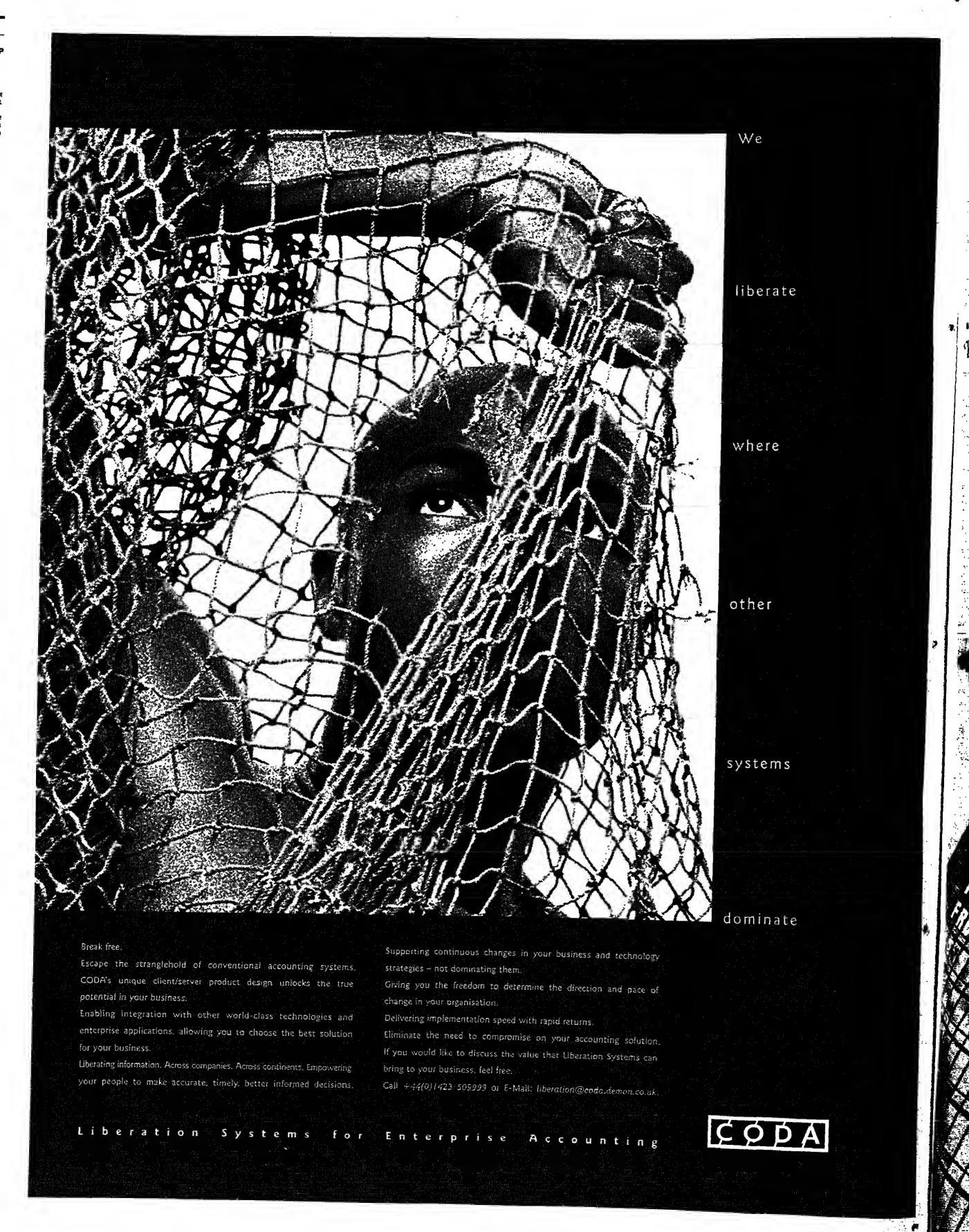
A much more evident in Long the close yests of the potentia rate activity, counter-move by BBA, but other rumou especially in ance sector.

General Ac being touted: gets and the buzz, albeit a rounding Uni bury Schwep

#### Luca deal hits

Engineer B lower as to spolling bitries ran Most analywith a sac With a sisation of ued at £80 which replans to replans t

The firmly Cadbr compaper c Coca-The ago



Guest column • Philip Crawford on the future of the Network Computer.

# Is this revenge on the nerds?

'The Network Computer represents the best chance of making computing available to everyone, both in the home and in business'

oes computer technology frighten you? Are you bewildered by the jargon and acronyms that seem to drop so easily from the lips of so-called 'techies'? Does the cost of personal computers (PCs) and the pace with which they constantly change, amaze

Even more importantly, do the life-cycle costs including software upgrades blow your mind?

The chances are that, for most people outside of the computer industry (and probably for a fair few people within it) the bonest, and perhaps unpalatable, answer is yes...

But why do these fears exist? Surely computer technology is there to help us by making our lives easier, as well as making us far more productive and efficient at our jobs?

Well, it should do, but the reality is that far too often it does not achieve this - and this is simply because, in my view, too many chief executives among computer manufacturers have forgotten what their users want from technol-

Brought up in the darkened room of the development lab, they are often in love with technology per se to such an extent that they simply want their users to feel the same sense of wonder and admiration. Well, wake up to the real world: not everyone has the same level of obsession!

Forgive me if I am wrong. but most PC users do not (and ahould not) care about how many lines of code went into their latest piece of software. Instead, users want to be assured that they can set up and operate their PC without wading through manuals the size of an encyclopaedia. They also want their PC to be cheap to buy and cheap to run. However, for too many high-ranking computer executives, such thinking is anathema.

Where is the proof of this techno-fear? Consider the example of the

humble video recorder. I remember wheo VCRs were first marketed as an affordable commodity item; enormously complex and resplendent with rows and rows of function buttons, they were touted as a high-tech "must-have".

is a strong one.

VCR manufacturers.

But is the computer industry

ready for such a shift in atti-

tude? Apart from the odd

Luddite with a vested interest

in preserving the status quo. 1

believe it is willing - and my

evideoce for this lies in the

through its Online Media sub-

sidiary, should benefit in a

number of ways from the

advent of the new computing

Mr David Lee, Acorn's chief

executive, points out that the

Oracle design contract has

helped fund the group's 50-

to-60 strong research team for

a year. In addition, Acorn may

be able to look forward to a

portion of the \$10 to \$15 licence

fee Cracle will receive for each

NC built using its specification

and should henefit indirectly

from sales of ARM chips manu-

But perhaps just as impor-

tant is the fact that the net-

work computer has provided

Acom with a coherent strategy

hased on the network concent

and raised the group's world-

factured by licensees.

devices.

But this was not what users wanted. Left befuddled by the sheer complexity of the machines, most owners had to admit, rather shamefacedly, that they did not have a dne how to operate their VCR. What has been the result of

this consumer reaction? VCR manufacturers have changed

tack dramatically and videos industry's rapid acceptance of recorders have quickly the Network Computer. To briefly recap, if you have appeared on the market with only the essential function hntnot already come across it, the

tons, such as play, record and Network Computer redefines What a computer should be: With research demonstrating small, inexpensive, easy to use, that the market for home purand without the complexity chases of PCs has allowed down and cost associated with dramatically and that many today's PCs. The concept behind the NC office users of PCs only use is that it is a device that is as perhaps 10 per cent of the func-

tionality of their machines, the easy to buy and set up as a telephone and which can perargument that the PC is too difficult to use for many people form simple tasks such as accessing the Internet, word processing, accessing spread-There is clearly a lesson sheets and e-mail efficiently here for the computer and cost effectively. And it is industry to learn: if It the concept that is important wants to make computing because inherent in the thinking behind the NC is the recogtruly pervasive in society, then it has to follow the lead of the nition that computing has to

of more than £1,000.

Costing around £330, the NC is priced at an acceptable commodity level and at a price point which will persuade consumers to jump on the computing bandwagon. It is not just consumers who wince at the cost of today's PCs and who are ready for a cheaper alternative: boards of directors of many companies must tear their hair out at the cost of maintaining and growing their PC infrastructure.

small number of sceptics in the computer indus-Atry bave have heen quick to deride the idea of the Network Computer and have put barriers in the way to its take-up. Claims that communications infrastructures are not in place to support such a device are amongst the more common arguments against the NC.

growth in chip technology. When Alexander Graham

be both easy and cheap. Cost is fundamentally important to the idea of the NC because, as well as the fact that PCs are too difficult to use, many consumers simply cannot afford to buy PCs which retail at an average cost

However, such arguments are irrelevant because as with any new technology, husiness and consumer demand will drive the market in come up with solutions to problems. In fact, the pace of growth in network bandwidth is significantly in excess of the pace of



Philip Crawford: The Network computer should be

sure many people suggested it could never he widely used because the communications infrastructure was not in place to support it. They were wrong then, just as NC critics are wrong now. Eveo so, the barriers to the NCs adoption have heen greatly exaggerated. Solutions to issues, such as communication infrastructures, are not far

I firmly believe that, because it is ao easy to use and so cheap to huy and maintain, the NC represents the best chance of making computing available to everyone; both in the home and in business. The irony is that, hecause the technical complexity behind the NC is effectively hidden from the user, many people will use one without even realising that

they are using a computer. In my view, this is exactly bow technology should operate: hidden from our view, but making our lives easier. And the computer companies that succeed in the future will be the ones that recognise this simple fact, rather than the ones who continue to promote products based on their complexity and the millions of programming hours that went into developing them.

In short, revenge on the nerds may soon be at hand. The writer, Philip Crawford, is

0990 23 24 25

to access and use in the home and the office," says Jim Allchin, senior vice president of the desktop and husiness systems division at Microsoft. "They want their PC to he

user-friendly

New-style PCs will be able to use a TV or computer monitor and control a wide range of consumer electronics devices. reports Tom Foremski

The future of the personal computer

make PCs more

Big moves to

uture PCs will offer more of what they already offer: more memory, supercomputer performance in a match hox, stunning displays, and they will respond marvellously to voice commands and band-written input. Such predictions are easy to extrapolate from the current steep rate of progress in PC technology, hut are not very

useful. Looklog at the immediate future, one to two years ahead, it is possible to huild a reasonably clear picture of the future PC and its uses. For example, hy this time oext year, the PC market will be more segmented with special PC systems for specific uses. The division between the home and busioess PCs will be much more pronounced. And the popularity of the Internet and corporate intranets, will give rise to a range of mobile and desktop PCs for Internet applications.

#### Boot-up time

Some of the new technologies that will appear in the PC of 1997, were discussed at the recent Windows Engineering Hardware conference at San José, California. These included technologies such as OnNow, which eliminates the long boot-up time for PCs and is part of the Microsoft and Intel sponsored Advanced Configuration and Power Interface (ACPI) technology that manages power use by all types of PCsnot just portable comput-

"Users are demanding that PCs become more convenient browse the Internet or run an application. Consumers don't want devices that take a long time to warm up or that use

OnNow and ACPI are part of Microsoft's efforts to make the PC much more consumerfriendly - and hopefully find oew markets among a large number of potential customers who are not computer literate and need not be to use the new class of computers. Microsoft calls the future PC design, the Simply loteractive Personal

Computer (SIPC). SIPC-based systems will be able to use a TV or computer monitor, and will be able to control a wide range of conas TVs. VCRs, stereo systems, Digital Video Disk players. cable modems and heating and security systems. Speaking at the conference, Microsoft chairman Bill Gates said the goal is to create a PC appliance that is easy to turn on and use,

"We would like to make it as easy as just plugging in a disk to watch a movie, listen to music, even have the PC keep track of what your favourite

movies are," said Gates, He added that the PC needs to be made much more userfriendly if it is to be accepted by all types of users in a wide variety of uses.

"You're not going to go to your PC to look up a new fact. or find out ahout movies if you're sitting there watching that memory test-program run. I don't think there's anything quite as antiquated as that memory test that comes up or those kind of ugly BIOS messages that we all see. Those have just got to go away,"

SIPC designs will lead to sealed case designs with no options for users to add mem-

#### The Acors NetSurfer 'The fourth wave of computing'

Continued from page 7 of the advanced video software

architecture for the NC. With the Oracle licence in place, Eidos is creating a plaform-wide de facto industry standard for software-based videophones for use over the World Wide Web," said Mr. Stephen Streater of Eidos.

Acom has dubbed its own offering - due out this antumn - the Acorn NetSurfer. The machine, demonstrated in London for the first time a few weeks ago, is expected to be manufactured locally under contract and will cost less than

The group expects to sell the machines initially to corporate customers such as retailers and financial service companies and to the education market through its Xemplar Education joint venture with Apple

Acorn's management empha-

semiconductor design work done hy a aister company, Advanced RISC Machines in which both Acorn and Apple Computer bave 43 per cent stakes.

Arm has developed the lowcost, low power consumption microprocessors which have been used in the Apple Newton and in interactive TV devices set-top boxes - such as those being used in the Cambridge trial where participants already have access to the World Wide Web through their

wo of these microprocessors, the ARM7500FE and the new high performance SuperArm processor, developed jointly with Digital equipment, are expected to power the first generation of

Interactive television set-top boxes share a number of similarities with the NC concept, sise that they are able to bring for example both are designed

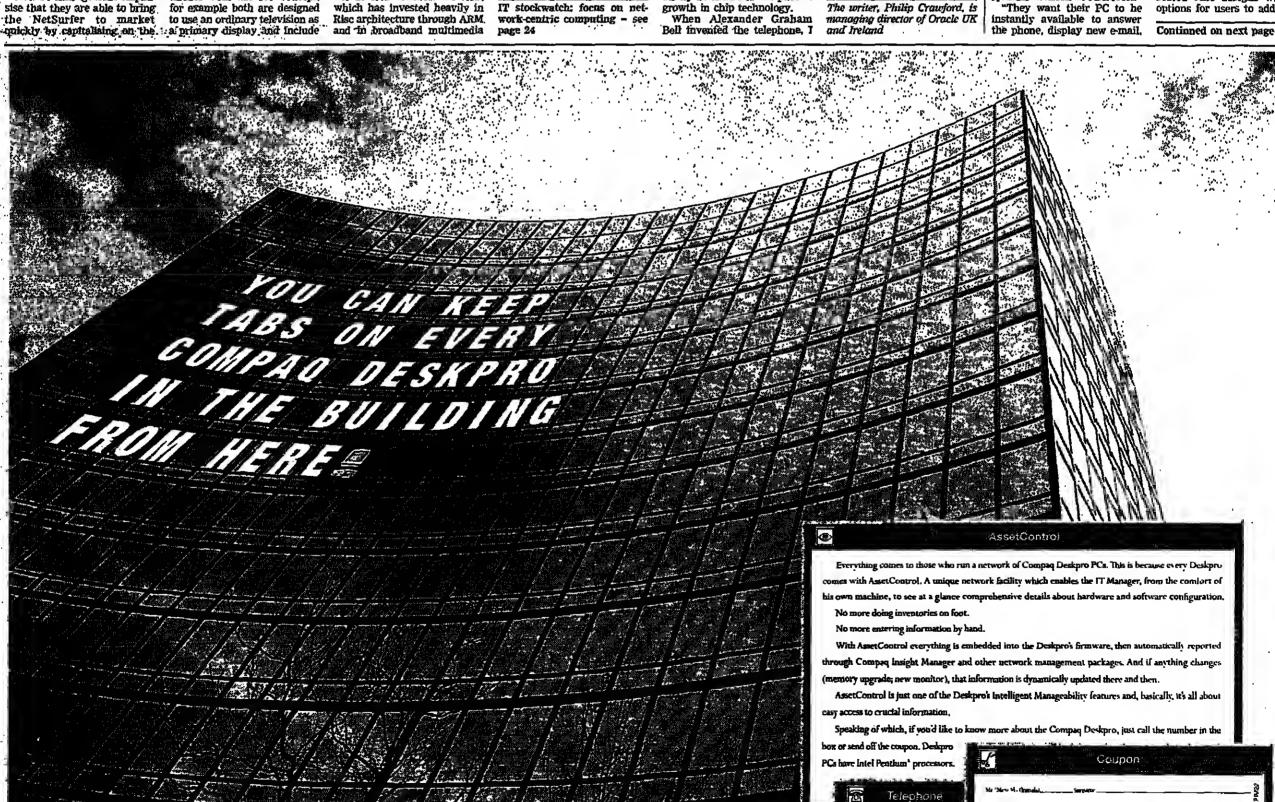
special "anti-twitter" and "anti-aliased" font display techniques to make text more readable on TV sets.

They are also hoth designed to be networked devices and do not depend on expensive local data storage devices which helps simplify the design.

"For years, Acorn has been focusing its efforts on making the benefits of computing technology more widely accessible," said Mr Malcolm Bird, chief executive of Acorn's new network computing division. "The whole industry has

heen slowly heading in this direction, and finally we are entering the fourth wave of computing. We have gone from the mainframe to the minicomputer to the PC and now the NC, with each wave costing less, being easier to use and offering access to more and

Aside from manufacturing the devices themselves Acorn, which has invested heavily in Risc architecture through ARM. wide profile. Acorn's home page on the World Wide Web is: World Wide http://www.acorn.co.uk/



ILCHNOLOGY GONE SANE

COMPAQ

>

# Bid

By Steva Thoma

A much more evident in Lone the close yest of the potentia rste activity. counter-move by BBA, but other rumou especially in ance sector. General Ac being touted gets and th. huzz, albeit a

rounding Uni

hury Schwep

#### Luci dea hits

lower as ta spoiling bi tries ran Most anal with a sac With a s igation of ued at £80 which r plans to t the US. sinly run £500m wi makes r strategic

ing engir Yet BF ambition tion. "It somethic from Bl analysts The co lysts' vi month, BBA formed market month: looking

Cadi The firmly compa

■ View from the top • Paul Taylor interviews David Garrison of Netcom

# Radical changes in PC usage

The PC has moved from being a desktop island to become a communications tool, says David Garrison, chairman of Netcom, the leading US-based independent Internet service-provider. The Net, he argues, is the catalyst for a sociological revolution

n April 10, Netcom passed another milestone as its subscriber hase moved through the 400,000 level. Since then, the company has established operations in the fast-growing UK market - the latest in a string of US service-providers to look to Britain for further growth.

For David Garrison, Netcom's chairman and chief executive, the events of the past two months cap a dramatic first year in the joh, during which the group's revenues nearly quadrupled to \$53.4m and its subscriber base grew by more than 300 per cent.

'I think a couple of sea changes are occurring simultaneously which are leading us to a very fundamental change in the way people use computers and the way people will access content of all different

Sir Peter Bonfield, chief executive

keynote address at InterForum 96

of BT, will deliver an opening

■ Preview: InterForum 96

types," says Mr Garrison whose background, before joining Netcom, included being president of SkyTel, a division of Mohile Telecommunications, and a spell as general manager of the Providence Journal, a publishing and broadcast holding company based in Provi-dence, Rhode Island.

"The PC has become a communications medium." he says pointing out thet well over half the new PCs being shipped are now equipped with modems -"and not just modems, but rea-sonably high-speed modems.

"The PC has moved from being a desktop island to being a communications tool," he says, "we think that is as significant a sea change as the introduction of spreadsbeets and word-processing programmes for the personal com-The second requirement,

his Friday, June 7, a European andience of directors and senior per-

sonnel from the IT-user com-

munity will hear an impres-

sive line-up of speakers taking

part in InterForum 96 in Lon-don when the theme will be

The future of the desktop -

husiness strategies for the net-

work-centric computing era".

executive of British Telecom

and chairman of IGL, will

deliver the opening keynote

The closing address at the

televised event at the Queen

Elizabeth II Conference Cen-

tre. Westminster, will be given

by Mr Larry Ellison, chlef

executive and president of

Oracle, the software company.

launch of an annual IT sympo-

sium by Uniforum UK, in

association with the Pinancial

InterForum 96 marks the

Sir Peter Bonfield, chief

says Garrison, is information

The amount of content, and the rate at which it is being added to the Internet, surpasses any other content aggregation we have seen in

It is not just content in the hands of a few who have traditionally controlled content, but this is a very broad-based 'content revolution' where people can create their own home pages and participate in the creation of content.

"Much of this will not be of interest to the masses, but the fact is that in this enormous content almost every special need or interest group can be satisfied and it is truly allowing new kinds of communities to be created."

For example, he points out, "if you live in a town or a village in the countryside and you suffer from a rare disease. you are really disadvantaged hecause you have no access and your doctor probably doesn't have much 'exposure' to it. With the Internet you can not only connect with other people who suffer from the disease, you can do your own medical research online In order to have intelligent questions to ask of your doctor.

Times. UniForum is a non-

profit organisation with more

than 1,200 members spanning

The one-day event will also

address an international audi-

ence via the FT Television ser-

vice which is available to TV

Other speakers will include:

Mr Irving Wladawsky-Berger,

bead of IBM's Internet divi-

sion, Mr Philip White, chief

executive and president of

Informix Software, Mr Keith

Todd, chief executive of ICL;

Mr Javaid Aziz, European

the vendor, user and central

government communities.

stations worldwide.

London symposium

desktop computing

on the future of

done is created a community of people that otherwise would have no bond - we have created communities of interest." The Internet, he argues, is the catalyst for a sociological revolution.

The third significant change

is the emergence of easy-touse tools which bring together the content with the communications device: "The most obvious one is the browser, hut there will be others as well.

petitor's products which would have taken days to complete before the advent of the Inter-As with the cellular telephony industry, he believes business and entertainment or

enormous opportunities for

productivity improvement,

using the Net," be suggests.

For example, companies can

use the internet's search tools

to undertake research on their

partners, competitors or com-

The browser in and of itself is professional and consumer 'The increasing amount of information on the Internet surpasses any other content

aggregation in history' a baseline entry point, hut l think we are just on the dawn of seeing the applications programme, the equivalent of the spreadsheets and word-process ing programmes that will really allow people to benefit from the vast content on the Net and to use it In ways that are meaningful to them."

Understandably, Garrison is also an enthusiast about the opportunities which he believes the Internet offers

vice-president of Silicon

Graphics; Mr Gene Banman,

general manager of Desktop

Systems Group, Sun Microsys-

tems; Pete Higgins, Microsoft's

group vice president, applica-

tions and content; and Mr

Peter Martin, editor of the

international edition of the

For more detoils of the

event, contact Mr Philip Flax-

ton, executive director, Uni-

Forum UK, 9-11 EBC House,

Richmond Stotion Buildings,

Kew Road, Richmond, Surrey

TW9 2NA: tel (+44) 181 332 0446.

faxback (+14) 131 332 0448.

Financial Times.

uses of the Internet will co-ex-

"In our experience, our customers are mixed-use professional', nearly three-quarters of the customers in the US and Canada are customers that use the Net for both productivity and information," he says.

They use the Internet to learn about their competitors, to do research on new products and to learn about marketplaces. But they also use the Internet to do research on bobbies, to undertake research on holidays in order to get the best deal and to learn about products.

"It is oot that we think that the Internet as a shopping medium is going to replace Sears," says Garrison, "I see it as an enabling tool for people to be much smarter shoppers."

In terms of revenues, Garrison sees the Internet continuing to supported by a mixture of advertising and paid-for ser-vices - matching the model in other media. In the US, he points oot, television viewers either pay by purchasing goods advertised on television, or by paying a subscription to a cable provider.
"In the US, the average

household is spending over \$100 a month on television, but they are not writing a cheque for that, they are huying products that are advertised on TV or they are subscribing to cable television. "I don't think people will

sign onto the Net and pay a dollar or £5 every time they want to access information: I don't think that is a reasonable thing because you don't know what it is you are paying for," he says.

that "tiered services" or "prior that many times that is the had a major problem where in two years time."

ity channels" for business traffic could emerge. "I think we will see this over

time," be says. "It largely depends on how complex the traffic gets and the rate of acceleration of video and audio, we are technically capahle of doing it today."

However, just what form of tariff structure might appear remains unclear - "It could be you will pay a higher amount for priority service, it could also be that all people get a priority service but you will get a discount for slower service, it could be time of day, it's too early to tell. In this husiness, we can he certain that it will change".

Garrison also has strong views on regulation of the Internet: "We tend to agree with the view that the Internet is hy definition an International product and no one country is in a position to control the content or the service, although we will certainly respect any nation's laws regarding the Internet - our system is designed so we can offer a different service in each country in which we operate we want to be very sensitive and responsible and responsive

"At the same time, we think it is about individual responsibility; we think it is about individual freedom and individual choice. We will offer tools such as 'Surf Watch' to our subscribers so they can screen-out certain types of content that they might find offensive for children, but I think you can find offensive content on the high street, too, if you know where to look.

"You can find offensive content in print, on satellite television and video tapes and you can find it on the Internet, but as a percentage of content I am told it's less than one percent, so it is not what the Internet is about: it happens to be a by product of what is there."

He also acknowledges that the Internet faces other challenges as it evolves, not least ensuring that the infrastructure keeps pace with demand so that traffic does not slow to a crawl. Already, he notes that many people accessing the internet through online services, experience service degradation because of network architectures and congested

The other bottleneck tends to occur at the actual content owner's site, where they have not provided sufficient capacconfidential information has

David Garrison: "There are enormous opportunities for business users

culprlt - and that is not related to any one carrier, but It is related to the demand on a very 'hot' site. That problem will continue as we grow, just because of increased capacity. as more users come on, you have to increase your bandwidth capacity."

However, for Netcom corporate customers, Garrisoo says that security issues remain the main concern: "They want

#### The Net may offer 'tiered services' for business

someone who can belp them with security issues, who can recommend equipment and configurations suitable for tbeir needs. They want to know: 'How do I monitor the number of people accessing my web site and bow do I provide a high level of service?" Security, he adds, is a real

issue, "but it's also grossly overblown ... we are very sensitive to the matter and have a department that focuses on security topics and complaints.

been distributed through the Net, hut hy definition an open oetwork such as Net is going to bave security issues, just like the postal service the credit card system and other facilities".

He also acknowledges that hy providing a gateway through to its Internal systems, a company is opening itself up to fraud. But he adds: "In our experience most of the hackers tend to be well-educated, relatively affluent teens, acting out of boredom and they back for the challenge of it, Most of them don't have a criminal intent. It's much like saying in the early days of television or radio you had 'static' problems - it's part of the growth of the husiness."

Netcom's business customers also want to know how to build Intranets and to connect pp disparate corporate locations: "We have corporate customers who actually don't want to access the Internet, they just want to use our intranet services," says Garrison.

But in the fast-moving Internet industry, Garrison says one fact is certain: "The Internet is defined by change. What "Thankfully, we have not it is today is not what it will be

# etworks 90

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#### ■ Future PCs

#### Systems will offer high speed graphics and larger memories

Continued from previous page: an 8 megabyte system.

necting peripheral units. The first SIPG systems should appear in the second half of 1997.

While SIPC is aimed mostly at changing the design of home computers, there are changes under way for business com-puters. Intel, for example, is proposing a new way of displaying three-dimensional graphic images that offers a

much faster performance.
Intel calls its technology the Accelerated Graphics Port (AGP), a new type of graphics bus technology that can transport graphics data within the PC at speeds as high as 200 Mbytes per second, double the 100 Mbyte per second rate offered by the 33 MHz PCI bus found in PCs.

The high bandwidth of AGP

is necessary for PCs displaying high resolution 3-D graphics for business and entertainment applications. AGP was designed in co-operation with leading graphics accelerator companies; Intel says it is offering the AGP specifications creation of an industry stan-

Another change is a move toward a Unified Memory Architecture (UMA). Instead of having separate memory chips to handle video graphics, there is a move to let the main system memory handle the video graphics. This arrangement could help cut the price of PCs, since memory chips are now being sold in larger packages, which means that to have a separate video memory in a PC, it would have to be larger and thus represent a larger cost of the system.

Other computers such as Apple Computer's Macintosh computers use UMA-type designs, hnt so far, Microsoft bas been resisting UMA designs because it believes that system performance could drop by as much as 40 per cent when running Windows 95 on 50 per cent of the market.

UMA supporters say that in ory of add-on cards. Instead,upgrades will be made hy constandard part of the PC architecture, and that cheaper memory will mean that personal computers next year will come standard with 12 or 16 megabytes of memory, which should overcome Microsoft's objec-

> Tony Tong, sanior product marketing engineer at chip maker S3, which just began shipping an UMA chip set says that an UMA system will probably have a much smaller performance loss. "We've been



don't think there's anything quite as antiquated as the PC memory test-program\*

able to show Microsoft that an UMA aystem with 8MB of DRAM would probably only auffer a 10 per cent performance penalty."

Mark Kirstein, senior industry analyst at US market research firm In Stat. says: "The majority of UMA systems this year will ship in European and other markets rather than North America."

Kirstein predicts that while UMA will get off to a relatively slow start this year, account-ing for about 6 per cent of PC shipments, by 1998 UMA-based PCs could account for at least

#### ■ CeBIT Home Electronics Fair

### New European show for consumer electronics

even bundred companies in the areas of per-sonal computing, consnmer electronics, media technology, telecoms, software and online services will be exhibiting at the first-ever CeBIT Home Electronics Fair in Hanover from Wednesday, August 28 to Sunday, September 1, writes Michael Wilt-

The five-day fair will be targetting distributors. resellers, purchasing co-operatives, small office/home office users and private con-

The event is timed to take advantage of the pre-Christmas ordering period for dealers at the end of August. allowing time for production in September and shipments in October and November.

Symposium

Alongside the fair will be an international symposium called "Learning for the Future", with demonstrations in a multimedia arena by suppliers of products and services, highlighting new Unit The UK fax-u-back number ways of teaching, training and interactive learning with the number is 44990 209 903.

IT. Other events incinde a forum for retailers, display areas for IT osers in schools and universities, presentations on the information society, digital video systems, computer graphics, high fidelity and surround sound, big screen TV, virtual reality, telebanking, home automation and a "Games Gity" with extensive hands-on facilities for visttors. In addition to themed displays, the fair will include modern and classical music

☐ For more information: tel. Honover on (0:511-890; fax (0)49-511-28 886 000; Internet address: http://www.messe.de

☐ The next issue of the FT-IT Review (Wednesday, July 3) will include themes on multimedia ond education, with details of innovative products being lounched of CeBIT Home in August.

☐ For more details of the July issue, plus the fax-u-back ser-vice, see the information panel on page two of this Review.

\[
\sum \text{The UK fax-u-back number}
\]

Preview: Tech-Ed 96 in Nice

#### Europe's largest technical conference

The future of the personal Visual Basic, Visual C++, computer - as seen by the PC software company. Microsoft - will be the main theme for more than 3,000 expected attendees at the software company's European Tech Ed 96 conference, which will take place in Nice, soutbern France, between Tuesday, June 11 and Friday, June 14.

The event at Acropolis Convention Ceotre will feature the largest range of Internet and intranet developer technologies yet seen in Europe. There will also be previews of oew software tools and products, including new versions of

Visual FoxPro and the Microsoft Office - all on show for the first time in Europe. The event will also feature

the company's Java development tool, code-named Jakarta, as well as the new ActiveX client and server framework. The four-day conference will feature 200 English-language technical sessions, with a dedicated stream of more than 30 key sessions delivered in French.

Details of the event are available in the UK on tel 0800-83445 or via Microsoft's home page at http://www.microft.com/show-

### Special IBM Supplement - Network Computing -

Solutions for a small planet

#### **News Briefs:** Internet solutions for businesses and other organizations

The Paris Pages: a very popular Web site for travelers who want illuminating information about the City of Lights. IBM provides hosting support for the site's 7.000-plus pages which feature descriptions of major mon-uments, museums and attractions, as well the latest weather satellite images plus train, bus and Metro routes. All this, to-gether with access to details on shopping, 1,600 hotels, 600 restaurants, airports and exhaustive events calendars. Visit Paris on the Web at http:www.paris.org/

Copenhagen City Council is putting open government into action through the Intenet. In the largest project of its kind in Europe, IBM has designed a solution that allows Copenhagen's citizens to access more than 2,000 pages of informnation via the Council's home page on the World Wide Web. Kiosks located in libraries and other public buildings provide access to information such as Council meeting minutes and agendas, thereby allowing citizens to review and democratically influence the decisions made by Council members.

Livia Insurance in Sweden markets its complex pension products in a way that is easy to understand. Customers fill in online forms to have their pensions automatically calculated and graphically displayed on the server home page. Livia is the first commercial insurance company to use such interactive techniques and has received widespread positive feedback from its customers. Livia's home page is at http://www.livia.se

Holiday Inn Worldwide and IBM are working together to refine and fully integrate the global hotel chain's newly acquired reservation and property management system. The system will provide Holiday Inn with a networked database linking the hotel's central reservation system with its property management system. The result will be a system that provides a single view of the chain's worldwide inventory of available rooms as well as customer profile information—thus improving the company's ability to maximize occupancy and deliver superior customer service. This initiative helps various segments of the worldwide travel industry improve efficiencies, reduce costs and increase the level of customer information in order to be better positioned for the future. IBM's Travel and Transportation Industry home page is http://europe.ibm.com/travel

Orginally developed to help IBM's customers and employeess communicate, share internation and access worldwide databases, the IBM Global Network today serves 30,000 businesses. and government agencies IBM's network provides integrated data, voice and video services with access in 850 chies in more than 100 countries. The JBM Global Network is connected to the Internet and 35 other international networks, and manages thousands of local area networks.

GAZPROM, Russia's natural gas conglomerate and its Russian Natural Gas Research Institute, VNIIGAZ, form the leading scientific and technical hub of the gas industry in the former Soviet Union. Operating as the national information center for gas technologies VNI-IGAZ is setting up a full online Internet system. The first such connection established in Russia, it is designed to provide access to state-of-the-art solutions, specialist networks, the latest international trends and key technology databases-all relating to the natural gas industry.

## **Executive commentary: IBM's vision** for the new age of the network

Dr. Irving Wladawsky-Berger, General Manager of the IBM Internet Division, talks about network computing and what it means to the customer

Q. Network computing seems to have emerged suddenly. Where did it come from and where do you see it going?

A. It's the logical next step in computing's evolution and is tak-ing the traditional evolutionary path of previous technologies. The telephone, broadcasting, autos and planes all followed such a course.

The first stage is invention and limited use. Then the technology becomes more popular and finally, as it becomes more affordable it appeals to a mass market and becomes an integral part of their

The computer is on the verge of being fully integrated into society, much in the way electricity is now. Today, nobody pays much attention to how electricity is generated and transmitted. We take it all for granted. In the notvery-distant future, information will simply be everywhere, as electricity is everywhere.

Q. How will access to information change the way we do business?

A. Many companies are integrating their internal operations, using Internet standards and Web

step is to expand this architecture using Internet technology to create an Extended Enterprise—with business data protected from unauthorized access by a "fire-

This architecture provides a delivery system for transmitting content. These could be any number of constituencies: employees, trading partners, customers, sharebolders, the press, security analysts, anyone a business chooses to communicate with.

In sbort, a business can extend its reach and add value all along

Q. How is IBM working to bring the benefits of network computing to customers?

A. We're approaching the task commerce. from four directions simultaamassed enormous volumes of tions and services. These are soluinformation on their internal systions that customers can use to tems and we're working to open offer their content over IBM's all that content and make it more Global Network thus avoiding the line with that, we're enabling all ware. Users can access them from our products to connect to the a browser and pay only for what Internet.

opment community create whole we're very deeply involved in new classes of applications that research and advanced pilots. will enable access and distribution of information, communica- Q. What does it take to conbrowsers on private networks—tion of information, communica- Q. What does it take to con-or intranets." The next logical tion, collaboration and electronic nect a customer's own infor-



Dr. Irving Władawsky-Berger

Third, we're deploying a varineously. First, our customers bave ety of subscription-based applicaaccessible using the Internet. In investment in systems and softthey need.

Second, we're working aggres-sively to help the software devel-that's serious about the Internet, And finally, like any company

Upon the shipment of Ex-

change, Jeff Papows, Lotus's

executive vice president and

COO, was quoted as saying: "I'm tired of shadow boxing." As the company entered 1995 it expected that Exchange would be its principal, and perhaps only, direct competitor. And indeed,

the product's eventual release last

month did sound the bell for a

long-anticipated messaging sys-

far won every comparative review over Exchange—on the basis of its unified solution for

customers seeking a robust

client/server messaging and groupware platform for building

and distributing custom applica-

tions that provide integration with the Internet's World Wide

So far, Lotus' one-stop solution is the one to beat. Jeff Papows,

again: "The sales cycle for Notes

used to include a lot of mission-

ary work explaining the benefits

of communication, collaboration

and coordination. All this just in

order to get prospects to examine

However, Lotus Notes has so

tem showdown.

mation to the World Wide Web? Is it a technological challenge?

A. It isn't so much a technological as it is an implementation

The core technology already exists and we're creating the 'glue" code that can be downloaded free to connect all our products to the Web. Database and transaction products like DB2 and CICS have already been enabled for the Web. And Lotus Notes, of course, already offers a

Cont'd. on Pg. III

Notes on its technical merits." "But now," he continues, "almost everyone appreciates the value of shared resources and has moved on to figure out how best to leverage these resources. Companies clearly accept the role of Notes in a Web environment—and that means opportunities for us where they

didn't exist before." Clearly, the messaging/group-ware/Internet "wars" are worth following-if nothing than for academic reasons—but it may be a while before there are any definitive winners other than Notes customers.

BULLETIN: Lotus has resolved to make the Internet its focal point and capture every bit of opportunity the world's most popular network generates. At the recent internet World Conference, the company announced shipment of Lotus Notes; Newsstand, a complete solution for delivering business periodicals on the Web. Also previewed: Webmaster's Apprentice, a Lotus solution for creating and managing Web sites.

#### New study reveals trend to Internet computing among world companies

The Economist Intelligence Unit (EIU), in a recent study conducted with the IBM Consulting Group, reported that the convergence of telecommunications and information technology will sig-nificantly affect the way companies do much of their business in the years ahead.

"Global Telecommunications to the Year 2000; The Impact on Corporate IT Strategies," as the study was titled, comprises indepth surveys of 120 companies in Europe. North America and Asia/Pacific supplemented by comprehensive interviews with ClOs and IT managers.

Overall, the study concluded that many companies will look to LAN/WAN technology to link their voice and data networks worldwide-and that they will fulfill more and more of their computing needs through ven-

dors' networks.

The study notes: 'The use of the Internet, perhaps today's best example of integrated telecommunications and IT technology. will grow in use from about 66 percent of companies surveyed to over 90 percent."

The convergence of telecom-munications and IT technologies is a widely recognized need, according to respondents, but business has yet to fully integrate either the management or planning of the two disciplines. However, the report found that in the next five years more than four-fifths of companies will be fully integrated.

Telecommunications is increasing in importance in virtually all companies, as demonstrated by the rapid growth of voice and data traffic expected in the next five years, the EIU study said. Voice traffic is expected to grow by 20 percent in that period, while internal and external data traffic should increase by 56 and

49 percent respectively.

"Clearly, business can no longer ignore the convergence of telecommunications and IT. The study shows that many companies are starting to look for some of the benefits that network computing will deliver." said Joseph F. Movisso, General Manager of the IBM Consulung

He further commented: "Fiftytwo percent of the companies predict that within five years they will use the networks of various service providers for their internal IT needs, a very surprising intra-enterprise focus."

According to the study, distributed computing is expected to grow rapidly over the next five years-from the current 60% of companies using some form of local area or wide area network to 97 percent.

# Two powerful tools that work together: Lotus Notes and the Internet



When the Internet entered mainstream culture last year, many industry watchers predicted the beginning of the end for IBM/Lotus's flagship groupware product Lotus Notes. Notes is the software that allows computer users to access and share documents simultaneously-regardless of where they are or what

platforms they're working on. The demise was not to be. In a letter to shareholders earlier this year, IBM Chairman and CEO, Lou Gerstner, reported that more Notes installations were sold in the last half of 1995 than over the entire previous six-year life of the

product. What's more, the remarkable adoption of Internet standards appears to have propelled Notes into an enviable position as a technology ideally suited to exploit the global connectivity which the Internet represents.

While many industry watchers at first saw the potential for Internet technologies-particularly those that supported collab-oration on the World Wide Web-as a threat to Lotus Notes by providing similar benefits at reduced cost, it has become increasingly clear that this is not

· Reliable Web sites on the Internet and so-called internally deployed Intranets require sophisticated, integrated and scalable technologies that characterize the Notes server. In other words, as critical infrastructure, Web servers require the types of services that today are only found in a

"The concern about the viabili-

ty of Notes in the face of the Internet phenomenon was really misplaced," said Steve Sayre, Lotus' vice President of marketing. "Serious interest in the Web has led the marketplace to a much deeper understanding of the value of technologies that support communication, collaboration and coordination. Lotus is clearly best positioned to benefit from this sea change in the market's tech-nology orientation. We are the only vendor with a fully integrated platform that is at once optimized for messaging, groupware and Internet connectivity."

The sudden popularity of the Internet was driven largely by the broad acceptance of inexpensive and "lightweight" Web browsers. which in the context of some applications-could be viewed as an alternative to the Notes client. However, the real battle for dominance in the Internet and Intranet will be for the server. Conventional wisdom has it that Lotus clearly offers the premier Web server solution in the industry

Notes' services-such as document management, replication, messaging and workflow engine, integration with other databases and systems management toolsdefinitively set it apart from relatively bare bones Web server alternatives. It is, in effect, sui generis in the marketplace.

Lotus CEO Mike Zisman puts the product into perspective this way: "Our challenge at Lotus is to take all the things that Notes does and expose them to Internet and Web protocols. In contrast, competitors have to take the standard protocols and figure out bow to add all the function that Notes has. Whose job do you think is

On balance, of course, those Web alternatives along with Microsoft's most recent entrant, Exchange Server, do present a legitimate challenge to Notesand company officials take them seriously after seven years in the market without a direct competitor. They are said to be eager to win the market battle for once

### IBM expands horizons into mobile and wireless service

agreements with many of the world's foremost mobile and

wireless computing providers.

Among those with wbom IBM is now partnered are AT&T, Bell Atlantic NYNEX Mobile and GTE Mobilnet. IBM will become a preferred provider of mobile data services and solutions for the carriers.

According to industry computing solutions. observers, the pacts are further evidence of IBM's determination to enhance its leadership role in the emerging network computing marketplace.

In a related development, IBM also announced on the same date that it had entered into agreements with a number of leading products and applications.

list of multinational firms that needed ingredients.

IBM recently announced a includes Ericsson and Ractotek. series of far-reaching service Under terms of this deal, IBM will serve as a single source for product procurement, integration services and end-user support.

In a statement, James L. Seitz, general manager of IBM Availability Services, said: "Mobility is a fact of life among our customers, and within that framework they are increasingly aware of the benefits of network

Now we can assure them that wherever and whenever they go mobile, IBM will be there to sup-

Andrew Seybold, editor of Outlook on Communications and Computing, put the new developments into perspective. The industry has been stalled by complexity makers of mobile computing in putting the pieces and parts together. IBM's entry into the The company will become a support infrastructure and its preferred services provider to a geographic coverage are the much-

In close conjunction with the carriers and manufacturers, IBM will move forward in a number of

 Marketing integrated endto-end mobile solutions from planning to implementation.

 Providing wireline to wireless internetworking solutions via the IBM Global Network.

 Internet access solutions and on-line electronic services.

 Supporting a customer's contract-based cellular require-

• Offering customers a single source of multivendor products and support services - more than 300 hardware and 700 software solutions that embrace desktop, network, laptop, handheld, modem and wireless technolo-

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# Special IBM Supplement - Network Computing

# Ten "myths" about the trend to network computing

As with all new concepts, network computing is frequently misunderstood, more than a little overhyped, and often difficult to fit into everyday reality. That said, this powerful new computing paradigm stands ready to transform businesses of every kind—all across the world.

What's real about it? What's fiction? What lies in between? In this article, Stephen G. Solazzo (Vice President, Client/Server Computing. IBM Europe Middle East Africa) explores the issues of network computing.

Myth 1: everyone's doing it. Not by a long shot; the fact is that many organisations are just getting started. But comforting as that fact may seem, there probably isn't a company of any signif-



icance on the planet that isn't thinking about piloting some network applications that could change the very nature of the way

they do business. Moral: now is the time to start the learning process. Nicholas Negroponte, of the MIT Media Lab, puts it this way: "The Internet may be the only technology development in history in which the reality exceeds the

Myth 2: Network computing is difficult to get into.

The famous saying, coined by Nike, says it all: "Just Do It." What we mean is that companies can readily make the transition into network computing with the help of experts in organisations like IBM or in the consulting or

academic fields. To be sure, training is needed on many of today's newest tools. But simple applications such as those for developing a Web site aren't beyond the competence of most companies. And they can open amazing vistas—with more than just traditional text and data, but

Myth 3: Network computing

What's going on here? Well, the fact is, like Myth #2, this one is both partially correct and partially false. Sure it's relatively simple to create a home page; but, face it, it may well turn out to be a bad home page. The point is new skills are needed to move into the

new world of network computing. There are serious issues to face. How much corporate information to put up; and of what kind? Security issues. Choices among many development applications. Customer relations. How to provide facilities for making sales over the Internet? How to handle and administer the volume of

For starters, IBM can help businesses work through all these issues. And more.

Myth 4: The Internet is useful only for communications applications.

Fact—many new applications

also high-quality graphics, video have capabilities that go far and animations. dialogue" across the Internet.

They have far-reaching business implications in such areas as direct marketing, customising product design, linking suppliers and manufacturers in real time, managing distribution channels. enabling personnel via wireless or mobile phones—and in providing on-demand information delivery.

Myth 5: it's the road to suc-

Sorry, but many implementations of Web sites have not panned out because they weren't integrated into other corporate

activities such as marketing.

The trick is focusing the whole company around the effort. Making sure every promotional item, every item of stationery, carries the home-page address. Making sure that content is updated and accurate. Making sure that hits are analysed and assembled into databases that are put to use. Remember, an unsatisfactory

Cont'd. on Pg. IV

#### **News Briefs** (Cont'd. from Pg. I)

UNESCO and IBM have launched an effort to put the international organization's vast store of educational information on the Internet. Among other things, the project will deliver online reports to educators on global events and initiatives, create an electronic forum tor decision makers in government and other organizations, give researchers interactive access to statistics and promote teaching techniques and development opportunities to educational institutions, particularly in developing countries. More than 200 megabytes of data drawn from a quarter-century of educational experience in more than 180 countries is now available at http://www.education.unesco.org

"The implications of network computing go on and on. It will transform every business, organization and institution in the world. Customers will have infinitely more choice in a net-worked world."

- Lou Gerstner

Exploration and Production (E&P) professionals in the worldwide oil industry make critical business and technical decisions based on the analysis and interpretation of a wide variety of information. Although large amounts of potentially valuable data are available, time constraints often mean that only readily accessible data are evaluated while other significant information might be overlooked. IBM has developed a solution for the worldwide oil industry called PetroBank, designed to provide E&P professionals with access to a shared online data bank. A user-friendly interface called PetroConnect assures easy access to this information via the Internet.

Bayer AG is working with IBM on a new Health Care Management project. Through the use of "smart" health-cards, patients will be able to access a network containing their personal medical records as well as worldwide databases containing information relevant to their particular needs. This solution will also enable physicians to access, over the Web, information on the latest scientific and pharmaceutical research. Material from online medical publications, libraries. teaching hospitals and research facilities will also be accessible to healthcare professionals.

MasterCard and Visa have agreed to support one of IBM's most innovative new applications: Cryptolopes. This easily implemented solution assures total and fail-safe security in financial transactions and other communications across the Internet. Cryptolopes may well become a big hit because security is what will make business move on the Internet.

Reuters NewMedia and a large group of other leading news and information providers now distribute "mission-critical" content through IBM's newly launched InfoSage online Internet subscription service. Using advanced profiling and search/retrieval technologies, InfoSage brings important benefits to business users who need convenient daily updates on a selected menu of subdaily updates on a selected menu of subjects in which they have particular interest. Subscribers can receive as many as 30 stories twice daily.

UPS and Federal Express Corp. Overnight delivery companies no longer compete solely on the basis of vehicle fleets, routes or employee performance—but also, and more importantly, by making knowledge instantly available to the customer. UPS and FedEx are opening up their internal databases and putting them on the Internet so customers can personally track their own package movements around the world—24 hours a day, seven days a week, at the click of a mouse. The underlying principle behind this story: in the Internet age, customer satisfaction can often be found within the very fabric of corporate operations.

"Wouldn't it

be nice if the

# wondrous. futuristic.

world of the Internet was just a little less, well, virtual?"

Something magical is happening to our planet. It's getting smaller. Every day, more people and more information are making the Internet a place of incredible opportunity and transformation.

Suddenly, people just like you have access to potential customers, business contacts, partners and competitors in every corner of the planet.

How can you make the most of this opportunity? Well, we'd like to help.

We have all of the minds and resources of IBM focused on the emerging world of networked computing. Over the next few months, we're going to discuss strategies and technologies to help you get from here to there. Let's start by talking about what's going on across the planet.

Electronic commerce is becoming a reality thanks to improved security and encryption technology like our innovative Cryptolopes which ensure that messages are read only by the people you want reading them.

Cybermalls are springing up everywhere, letting companies sell their wares to millions of customers on line, without costly premises. Instead of gathering dust in a warehouse, products are made and shipped to order.

And what's more, the more enterprise data you can bring on line, the wider you can cast your net.

The managed IBM Global Network is helping companies connect. Enterprises are expanding to give customers and suppliers piping hot information on prices, inventory and delivery schedules. Making them more efficient and honing their competitive edge.

All thanks to one of the world's largest managed data networks with managed access from Rio to Reykjavik and 848 other cities worldwide.

By using Lotus Notes over the Internet, people in remote locations can work on the same project simultaneously, expanding their reach even further. If you are eager to take advantage of the Internet, you don't need to be a millionaire. Or a genius.

You just need to drop by www.ibm.com for further information highlighting how IBM can help your business thrive in a networked world.

This is just beginning. We have a lot more to share with you. Just remember: it's a small planet. And it's yours.

Solutions for a small planet

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# Special IBM Supplement - Network Computing

# The home page is not an end in itself, just a beginning

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While the Internet can no longer be seen as fad, initial enthusiasm on the part of consumers for exploring its rich sources of information and service could indeed wane. John Patrick, IBM's Vice President for Internet Technology sounded this note of warning even as interest in the Internet was at an all-time high—fueled by events and exhibits at Hannover's CeBIT fair, Europe's largest

Patrick's viewpoint, paradoxical as it may seem, is based on a serious concern that businesses could ignore the full interactive potential of their home pages and thus fail to draw sufficient levels of consumer interest to justify the whole process of developing and maintaining Internet connectivity. Above all, he believes, this is a crucial time for companies to actively exploit the Internet's unique qualities-as opposed to simply posting home pages.



John R. Patrick, VP Internet Technology

The dilemma, as John Patrick sees it, is this: many companies could be missing the whole point of the Internet as a corporate tool by regarding the home page as the end of their efforts rather than the opening lines in a chapter of opportunities. "I am disturbed," he says, "at the notion that once a company puts up a home page that's all there is to it. I can almost hear them saying 'the door is open, now let's get back to work."

Apparently, many users are failing to look at the home page as a place for new ideas and innovative presentation. To be successful, companies must abandon the notion of simply digitising the corporate brochure—and instead adopt a completely new production ethos. "The static home page is dead," says Patrick. What really counts, in his view, "is a live web site that sits up and does something."

"It's not all that difficult to accomplish," he continues. "All the tools are in place to bring off this transformation with relative ease. There's nothing mysterious about building a site that creates relationships...that exploits the potential of multimedia by making it rewarding to explore."

On the other hand, with all the competition out there on the Internet, it's not just smooth sailing. Developing and maintaining a successful Web site can be costly-but so are full-color corporate brochures and catalogues. And while such pieces might be thrown away at any time, a Web site is potentially forever. An ongoing effort that continues over time to attract interest, respond to inquiries and open the enterprise to ootside interest of huge proportions.

And that's the real key: unlocking company resources, and deploying years of accumulated information, to reach a new worldwide constituency that includes everyone from shoppers to shareholders to suppliers to multinational organizations.

"The technology and the interfaces exist," concludes John Parrick. "to selectively move the data that's often trapped in back-office systems and get it onto the Web where it can connect, in real time, with real people." But in doing this, the fundamental principal to bear in mind is that the home page is only the first step.



# Vauxhall: on the highway to the Internet millennium

Vauxhall has become the first UK the whole thing. It's as simple, for auto manufacturer tn launch a fully integrated and interactive Web site for advertising and mar-

keting on the Internet. The site features innovative layouts and graphics that nffer users the opportunity of getting everything from pricing to safety and comfort features to dealer locations.

Alisdair Luxmoore, Brand Communications Manager at Vauxball, comments: In our view, the project has had a very subtle and important benefit; the fact that it represents Vauxhall's use of highly advanced technology reinforces the image among buyers that Vauxhall cars themselves are the epitome of high-tech excellence. The medium is the message: it says that these are 21st century vehicles.

Vauxhall's Web project has been just one element in a cam-paign to lannch the Vectra model. In addition, IBM has created the means to advertise the brand via interactive kiosks, CD-ROM and interactive television.

Reach is everything in the Vauxhall campaign: getting the story out with an extraordinary breadth and depth of detail that goes far beyood the confines of traditional media

A corporate Web site can make information not only attractive, hut also highly accessible. The Vauxhall site's interactive menus allow customers to absorb sales features in any order they choose, and in any amount.

Observers note that there's a rather persuasive immediacy to

example, to locate your nearest dealer as it is to scroll through the available colors for different Vauxhall car models.

Luxmoore again: The response has been excellent. From the public, the press, industry experts and Internet users themselves. And most importantly, we're zeroing in oo the right car-buying aodiences. Over a million hits in the first four months, which is equivalent to 50,000 viewers on the Internet alone.

We can measure which pages are looked at most, and wheo. We get feedback on which information is most popular—and it's fast and accurate.

IBM was involved in every aspect of the project: creating the Web site and its graphics, supplying dealer hardware and maintaining and updating the content. Vauxhall notes that IBM was the only company that showed competeoce in all the disciplines.

The challenge in developing real time marketing information is drawing attention to the site and bolding it. One example: IBM fed live results of a rally to grab rallying enthusiasts. And still another boon for browsers; current road traffic information on the Vauxhall site—updated every 43 seconds and combined with useful maps and graphics.

Steve Byrne of the IBM Interactive Media Centre: "We can respond to a marketing need and provide a comprehensive creative/technical strategy for allelectronic channels."

#### (Cont'd. from Pg. I) mature environment for sharing rich oew capabilities to create something fresh and compelling. Naturally, network services are Again, at Internet World, we introduced Lotus Newsstand, a

information over the Web.

indispensable, and the IBM Global Network is the largest vnice and data network in the world. We'll either run the customer's applications on nur network, build one for them, or operate the customer's existing sys-

Q. You mentioned electronic commerce before. What kind of future do you see for it?

A. Unquestinnably all the pieces are coming together. In fact, 1995 was a year of breakthroughs fur electronic commerce. Two principal security protocols, S-HTTP and SSL, became interoperable. Banks and financial services companies embraced the Web. MasterCard and Visa agreed on an approach for secure credit card and transactions over the Internet.

In fact, at Internet World, we introduced Net.Commerce, a service that enables merchants to do business securely over the internet

In the near future, online marketing catalogues should have considerable potential, first in the business-to-business arena and then on a broader, consumer

Electronic publishing will proride a radically new channel for journals and magazines. This isn't just a matter of making retrospective material available electronically—but of taking advantage of

complete set of tools for distributing subscription-based publications over the Web.

**EXECUTIVE COMMENTARY** 

Q. How long before we see companies and institutions actually using network com-puting for their day-to-day business activities?

A. Actually this is happening today. The 22 hospitals of the Greater Dayton [Ohin] Hospital Association, for instance, use the IBM Global Network to communicate with some 2,500 physicians in their coverage area. They transmit clinical information and patient records-making for more efficient, lower-cnst medical care.

The same principles can be applied with equal value in other industries like manufacturing, distribution, media and finance.

Q. Can you give us some idea of what IBM is doing on the research front?

A. There are a number of very exciting developments in digital video. We beld a live, interactive press conference over the Interoet, for example, transmitting a digital video signal that could be received by anyone in the world with sufficient bandwidth.

Digital libraries are another fas-

cinating effort. We're helping the Vatican Library and others digitize material in their unique collections in order to share it with the world.

Our Research Division is also investigating everything from remote access and mubility tn electronic cash and systems management. And one thing we've learned in our long history is that preserving vital business datamaintaining personal privacy and guaranteeing the rights of content owners— is absolutely critical.

). What would you say IBM brings to a customer who's interested in exploiting the Internet?

A. Well, the real key to exploiting the Internet is taking all the technology that's been developedespecially sofware - integrating it with services, and applying a real knowledge of the cusmmer's business to produce applications solutions. We have the resources to do that for any customer, large nr small. We have the most scalable, reliable technology, the trained service personnel, the network experience and expertise, and the husiness parmers to make it happen.

A quarter century agn, IBM had an advertising slogan: "The way we put things together sets us apart." It seems that we're hack to the future.

# Behind the Internet: a new generation of Servers

Just two years ago. mainframes were virtually written off as a casualty of the move toward a decentralised form of computing know as "client/server."

Mainframes were not only seen as being expensive, but also unable to compete with a wide array of alternative technologies that were then flooding the world market.

As it transpires, however, many companies now realise that the moch-beralded benefits nf client/server computing bave been overshadowed by the complexity and cost of sopporting disparate informatinn systems.

Today, businesses are searching for a better, more efficient way to gain competitive advan-

tages—by going a step beyond client/server. That step is to Network Computing, where they can connect directly with their customers, employees, suppliers and many other constituencies in a manner that transcends both time and distance.

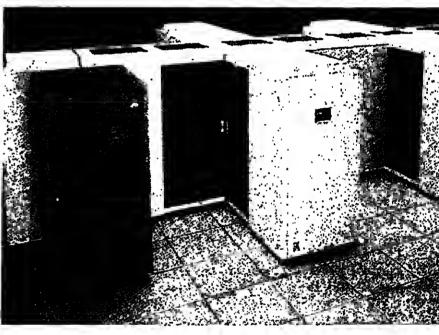
To enter the realm of Network Computing many companies are turning to a new gen-eration of mainframes—large servers— which help them unlock valuable data stored in the firm's "glass hnuse" and make it available to the outside world.

For Buell Duncan, general manager for product marketing at IBM's Paris headquarters, the move to more powerful and open servers has been an inevitable consequence of the increasing emphasis on information access and distribution.

"Today, much of the data in the corporate world is stored oo large systems because they offer scalability, reliability and security at the Inwest total cost-24 hours a day, seven days a week," said Duncan.

"These attributes become even more important as corporations seek to take advantage of the Internet and Intranets."

Major companies are already adopting the new server technology to cope with the demands of managing vast amounts of data. At the recent Internet World con-



IBM's S/390 Paraller Enterprise Server (left) is used at the heart of the client/server network at the 1996 Olympic Games

ference in San Jose, Calif., executives from American Airlines and Holiday Inn showcased industryleading solutions developed by IBM that belp them use the Internet to better serve their customers.

John Samuel, managing director of distribution planning at American Airlines, commented: What makes the combination of [IBM's] S/390 and Internet technolngies so exciting for American Airlines is that it provides us with the opportunity to establish an even better communications channel with our best customers-while at the same time reducing costs."

To support Holiday Inn's consumer Internet service, Holidex, which allows travelers to make reservations via the Internet, extra strength was needed. "We must have reliability, high availability and exceptionally fast transactions rates [to support Holidex], said Dennis Erskine, vice president for systems and applications development. "Our System/390 provides all that and more."

In addition to developing more powerful yet cost-effective server hardware platforms. IBM has created a wide range of software servers that provide companies with complete, secure business solutions. When The New York Times wanted to offer its readers a

competitive, on-line search toolan electronic version of the newspaper's classified ad section-it chose IBM's DB2 database server and web server to do the jnb.

"What's happening here is that companies are no longer using mainframes as traditional, hierarchical processors of informatinn." says Duncan. "They're literally turning them inside nut to give their customers new products and services."

From multimedia encyclopedias and online reference libraries tn information on corporate Internet and Intranet sites—the large server is an ideal platform for storing and managing vast amounts of data in a reliable and cost-effective way.

And the large server is totally secure, a major consideration for companies interested in moving their commercial transactions onto the Internet.

Today's IBM's S/390, supports OS/390, a network-ready, open, integrated large-server operating system that runs both MVS and UNIX applications.

### A secure market for copyrighted material

There is general agreement that the Internet offers great potential as a marketplace for the sale and purchase of a wide range of copyright-protected material.

But moving forward to fulfill this goal, which would greatly enhance the quality and variety of Internet content, has raised a oumber of serious issues.

users are looking for,

more effective business tool, IBM has formed relationships with a number of leading technology and information providers. Thus, the technology is in place

to facilitate the search, retrieval and purchase of content-including still images, text, sound and video-from distributed databases in a wide variety of formats bosted on a number of popular publishing platforms

An example of bow Info-Market works. A user enters a query "XYZ Corp." on the Info-Market search page, accessing all available data resources. In turn, he receives a relevance-ranked oumber of serious issues.

\* How to find and retrieve what a link to XYZ's Web site, credit and financial reports, news arti-



property from illegal use once it is placed on the Internet:

· How to assure that content owners are paid for the use of a Cryptolope requiring payment their works, even as they are redistributed to others.

IBM InfoMarket is a new network-based service which comprehensively addresses these problems. It provides the Internet's only capability for simultaneously searching the Web, Usenet newsgroups and private commercial content with a single

The service makes use of cryptolopee technology, secure electronic envelopes invented by IBM, to enable publishers to sell copyright-protected informatioo on the Internet—quickly, easily and safely. And it provides both access and purchase mechanisms for those who wish to access the material.

service to make the Internet a vice.

· How to protect intellectual cles and consumer comments in newsgroup postings. Content selections are accessed-some will be free, and others will be in

> to view. Pricing and usage permissions are explained in an abstract on the outside of the Cryptolope. Info-Market processes payments and provides rights management services to the publisher. Customers are billed moothly for their purchases.

On the seller's side, InfoMarket is developing special Plug-N-Publish toolkits to allow publishers to customise the "look and feel" of how their content is presented. In addition, Info-Market will support the ability to pay consumers who choose to read certain advertisements... allow direct marketers to reach highly targeted audiences...and even offer coupons and tiered pricing In developing this revolutionary to volume users of the new ser-

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# Network computing is creating the new era of Extended Enterprise

Christian Thommessen, Vice President, Network Computing, IBM Europe/ Middle East/Africa, examines the dimensions of a rapidly developing trend in world business

Quite often, one hears that Internet technology is transforming business organizations into 'virtual corporations.'

Unfortunately, the term is misleading since it suggests that some ethereal cyberspace experience is going to replace the reality of productive, value-enhanc-

ing, day-to-day work. What has evolved, as Internet computing gathers momentum, is a phenomenon that's more correctly described as the Extended Enterprise. Let me put this in perspective with a hit of historical background.

As technology has evolved, we've seen great changes in computing over the past three decades. First there was the centralized model of computing with mainframes and large central processors.

Then came the decentralised, or democratised, phase—the PC revolution which put a lot of the

power in the hands of end users. Now, we've evolved to the point where the computing power of the enterprise is linked—with mainframes and servers and PCs—in a cohesive network

The Internet has arrived, and it is fast becoming the very fabric of modern corporate life. Why? Because it makes huge amounts of useful, timely, pertinent and

productive informatioo available

to everyone, everywhere, at any

What a revolution this evolution has produced. The Extended Enterprise is made up of employees with new levels of empowerment that add value to their work-communicating through a variety of devices that link them to the company's factories, suppliers, customers, prospects, shareholders, vendors, consul-

tants, retailers, and wholesalers. What does today's Extended Enterprise look like from the

Typically, you might see that traditional departmental structures, with their rigid walls of demarcation, are giving way to quick, efficient network-based collaboration among people in various company locations.

This allows a wide range of dif-ferent and highly targeted skills to be brought to bear on particular situatioos—with results that are

not only productive for the company but also especially gratifypany but also especially granty-ing for the participants. (The "skunkworks" concept. as an American colleague told me, is very much alive and well.) Other examples of improved collaborative effort abound in the

Extended Enterprise.

Under the new Internet paradigm, sales personnel can be out in the field—where they should be-and still, in effect, be part of the headquarters group. Also, suppliers and veodors can effectively be brought into the corporate loop on a regular basis. And customers,

And no longer do companies have to spend excessively to bring in respondents from outside to conduct on-going product and marketing research. Instead it can be dooe over the Internet. In min-

And consider the far-reaching implications of this revolution on a company's ability to cut back on the expansion of office space and related facilities—utilizing that money, instead, for plant and laboratory enhancements.

But at its heart, the Extended Enterprise is all about creating possibilities for the workforce. Those who choose to work at home some of the time can do so. Others can choose to work in offsite "clusters" with a just a few fellow workers. And, through access to the Web, employees' sources of learning, training and work-enhancement are vastly



multiplied.

Not to mention their ability to conduct research around the globe. And to chat with their associates and colleagues in other firms, universities and on the plant floor. Openness is every-

thing; and it's here today.
We're looking at a whole new way of enhancing morale and of huilding employee confidence and commitment. Upward mobility isn't just a hope in the Internet age; it's an attainable reality.

And consider this as well. Both

intra-company connectivity and communications between a company and its many constituencies is being further driven by relent-less advances in mobile and wireless technology. And by digital video, video libraries and through teleconferencing.

If all this doesn't add value for the Extended Enterprise-in all aspects of its business-then I'm sadly mistaken.

There's something else going

on here that's particularly worthy of mentioning. To be sure, both large and medium-sized firms embrace Internet computing for all the right reasons. But uniquely, the new paradigm of corporate life may well have its greatest impact within the huge universe of small and entrepreneurial firms which must, perforce, get every ounce of productivity from work forces of limited size,

Internet computing can extend the 'reach' and informationaccess of everyone within such firms—by orders of magnitude. And that's what makes the small guys into giants-even on the hotly competitive world stage.

The Extended Enterprise came into being through Internet computing. It serves as a model for those who wish to revitalize a corporate culture. It is universal and its economic benefits are demonstrable. Why? Because knowledge is power.

#### IBM and the 1996 Olympic Games: an overview

The task of staging the most technologically advanced sporting event in history, the 1996 Centennial Olympic Games, is nothing short of colossal. Set to commence in Atlanta in just six weeks, the event is said to be the equivalent of holding two Superbowls (the American professional football championship) each day-over a period of seventeen consecutive days. Arguably, it is the largest combined event, of any kind, ever held oo American soil.

Logistical challenges abound, and are as heroic in their dimensions as the feats of the Olympic Games athletes themselves. Nothing must go wrong in presenting-and reporting-a series of competitions that captures the imagination of a vast worldwide audience. Not only are the Olympic Games a sporting festival, they are a celebration of huntan achievement and progress.

As the Olympic Games official information technology sponsor. IBM plays a pivotal role by providing technology, services, expertise and per-sonnel to help the Atlanta Committee for the Olympic Games (ACOG) set up, organize and run the 26th Olympiad, In partnership with the ACOG, IBM has developed a range of solutions that address logistical challenges ranging from day-to-day administration to establishing and maintaining the Olympic Games Web site on the Internet.

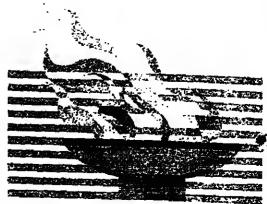
IBM brings a wealth of expertise to this task. It has played a key role in Olympic Games information technology since it first became involved 36 years ago with the winter events in Squaw Valley. Its contributions have evolved over the years, allowing organisers to benefit from wide-ranging technological advances and thus meet the growing demands of each successive Olympiad. IBM's experience in working with worldwide business partners flows directly to me process of making its Games management systems robust, scalable and highly

When the competitions begin this summer, IBM's most visible contribution—the Results System—will provide an historic first: instantaneous scores, results and updates for worldwide dissemination via the Internet, broadcasting and the press.

The ACOG's confidence in IBM's multiple capabilities is evidenced by the fact that the company was given sole responsibility for Olympic Games systems integration. The goal: to ensure that all technology provided by other ACOG partners-AT&T, BellSouth, Kodak, Motorola, Panasonic, Sensormatic, Swatch and Xerox —works seamlessly together as one total, all-embracing solution.

**Bob Neal, Director of Information** Systems for the ACOG, comments: "IBM is not just supplying solutions but helping us find solutions. By selectiog the right product mix, working with other sponsors and suppliers, and driving to integrate solutions. IBM is truly a partner in our success."

The 1996 Olympic Games form an ideal testing arena for IBM to demonstrate not only its business ethos to a world audience-but the technology behind its unique solutions. The company believes the Olympic Games offer an unrivalled technological showcasc and is solidly committed to sponsorships. over the years to come, in venues such as Nagano, Sydney and beyond. As the world leader in information technology. IBM can do no less than demonstrateon a global scale—its ever-growing and ever more productive array of solutions to enhance the staging and enjoyment of the world's greatest series of competitive sports events.



#### "Safe-surfing" a key goal in Internet computing

information security lapses in 1995. For nearly two dozeo of these companies, the total cost of these breaches exceeded \$1m.

This situation, and the publicity around it, has tended to create a climate of uncertainty among many businesses considering whether to take advantage of the power of the Internet.

By way of background regarding IBM's position and activities in this arena, the first point to be made is that computer security is as old as computing itself.

Although changes in the computing environment raise new security challenges, the fundamental issues remain coostant. They include:

· Control of access to informa-

 User authentification and password systems: · Encryption and decryption of

selected data: · The ability to edit shared data-

bases of information, and: The ability of authorised traffic to pass through various network gateways.

With the vast increase in today's network connections and data flow, there are many more links in the transmission and access chain.

The challenge is to maintain the integrity of each link. IBM, a pioneer in security solutions, has two-pronged: to implement local integrity of the core system, and toward maintaining security as the customer interfaces with other computers in a highly net- an IBM-developed "electronic worked environment.

To address these issues IBM has developed SecureWay, the common brand for its broad porttolio of security offerings which include a variety of hardware, software, consulting and services to help customers secure their Internet, the transmission of

Gateway actually installs a "fireinto public networks like the Internet while restricting the ability of outsiders to gain access to internal systems protected within Data Encryption Standard, based the "firewall."

health data and other sensitive material—all are accomplished, when encrypted, more safely and privately on the Net than in any other way. Of course there are issues yet to

A recent study of 1,300 business-es revealed that sixty perceot had suffered financial losses due to Connection Secured Network

be resolved: how to make provi-sion for third party access, those with legitimate claims such as the government in certain investigawall" allowing users to reach out tion, or a company with valid rights to documents in an employee's files.

on private key encryption, which



security oversight tools: an audit capability, for example, which allows administrators to assess the security of the system, to access reports on invalid pass- example, to encrypt PIN numbers word attempts and attempts at in millions of ATM banking transunauthorised access.

Many people worry about Bringing secure electronic threats to privacy posed by the commerce even closer is the Internet. According to experts, recently signed agreement behowever, the development of encryption technology can actually guarantee both individuals and businesses more privacy than they

have now . Scrambling and unscrambling word and number messages on come up with a strategy that is transmission, through the use of encryption and digital signatures, security control to ensure the can ensure the confidentiality and integrity of the data ex-changedthen to decide on an approach as well as the identity of the parties exchanging the messages.

Cryptolopes, for example, is post office" that facilitates cryptographic signing and sealing, and is more secure than certified mail. (Now, in the US, when you send "e-cash" to the IRS, you can really prove it.)

Credit card transactions via the

IBM Home Page for General Information:

http://www.ibm.com

Network Computing

http://www.ibm/NetworkComputing

Internet Products & Services

http://www.ibm.com/internet/

John Patrick

IBM has also developed new it made available on a royalty-free basis to the public beginning in 1975. Eodorsed by the international banking community, DES is used around the world, for actions.

> recently signed agreement between IBM and another leader in computer security, RSA Data Security, Inc. The two companies plan to modify their hardware and applications so that they are interoperable. They have also committed to the development of open cryptography for the Internet, assuring customers and developers safe universal access consistent with current government reg-ulations on cryptographic prod-

> Security isn't something that a company simply buys, installs and then forgets about. To the contrary, one of the most important elements of IBM's security portfolio is a consulting service to help customers design and deploy ongoing information technology security solutions.

Trained experts assess the possible security risks to a customer's system; they define security needs, recommend and implement security products and services in line with those needs, help administer security policies and practices, and audit security controls-repeating the process when necessary.

IBM knows that security is what will make business move on the Internet and it has the industrial-strength technologies to make the Internet safe for business.

### The ten "myths" of network computing CONTROL STORY CONTROL STOR

experience on a company's Web panies, unfortunately, have over-site is a real turn-off. Better to looked the Web's vast potential in invest the time up front to make sure that users enjoy a fulfilling experience right from the get-go.

Myth 6: No one is making money on the internet.

That's something we hear a lot of, but we take it as something of a lame ratiocale for not getting on the starting blocks. It's more reasonable to assume, in fact, that those who are profiting from Internet computing probably just aren't blowing their horns about it to any great degree.

The operative principle is *not* to get uncomfortable if success stories don't abound in your industry. Competitiveness breeds confidentiality, but that's no reason at all for a wait-and-see attitude. Who knows? A rival could be up on the Internet right now, taking cus-

tomers away right and left!
(Note: for a real confidencehuilder, we refer you to a whole range of IBM-based Internet success stories oo the first page of this supplement.)

Myth 7: Security is a big problem.

We'd say that it's an issue, a

very real one, but not necessarily a problem. To get IBM's view on the current state of play, we refer you, again, to an important frontpage story of this supplement.

Myth 8: Now that network computing is here, the client/server model is dead.

Some companies have considered skipping C/S systems in favor of moving right into the world of oetwork computing. But are the trade-offs worth the risks?

Behind today's network-hased front ends and user interfaces lie some complex Client/Serverbased information systems. With implications for security, distributed data, transaction and multivendor-systems manage-

ment, messaging and even more. Bottom-line, companies should probably keep their focus on implementing C/S-based systems as a solid foundation on which to build network computing. Most leading examples of successful networked applications are, in fact, built as extensions to C/S systems.

Myth 9: The internet is an external tool.

As the song says, "It Ain't Necessarily So!" Too many comstreamlining internal communications and connectivity. As an inhouse, corporate tool, the term "Intranet" is particularly apt and descriptive. IBM's experience. for example, in implementing a



portion of our field force is very

revealing.
The "Intranet" application became very popular-so much so that we published it on the Web allowing everyone with a browser, and appropriate security authorisation, to access it. On a worldwide basis.

One neat side benefit of this implementation is that it was relatively easy to take a subset of the application and make it available to all Web users, thereby giving access to our customers, partners and others via the IBM home

Does all this raise ideas for your company?

Myth 10: If you're not on board it's already too late. Hey, you already guessed our take on this one. Of course it isn't too late. Just do it!

Take the rational approach. Begin by introducing network computing technologies based on the information to which you want to provide access. Then, move on to integrate these applications with corporate information and operations systems

Finally, exploit the capability by enabling customers-around the world-to perform "self-service" in virtual malls, catalogues, kiosks or via on-line services. What it's all about, really, is "selfservice" in a company's long-

Steve Solazzo, is Vice President, Client/Server Computing, IBM EMEA (Europe Middle East Africa). To write to him via e-mail: solazzo@fr.ibm.com

III. Industry in transition • By Andrew Baxter

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The pace of change accelerates

While information technology is increasingly important to manufacturers, they are faced with a growing list of competing IT products. Managers are anxious not to be tied into any one system that might be obsolete in five years' time went out to lunch, and when I got back the whole industry had changed" that was Bernie, a character in the Dooneshury cartoon strip, explaining why his software company had suddenly hit trouble.

in the real life world of manufacturing, developments do not occur quite as fast as that, but anyone revisiting the computers in manufacturing scene after two or three years on a desert island would be struck by the pace of change.

Nowhere is this truer than with the Internet. Three or four years ago, most manufacturers would probably not even have heard of the Net, let alone understood its potential significance for their husinesses. But a recent survey of UK manufacturing industry hy Benchvision, found that the Net was one competitive tool that industry seems ready to grasp L' two-handed. Manufacturers saw the most important potential benefits as quick access to information, faster communications at lower cost and dedicated marketing, while the most important envisaged use was for international commu-

> The more forward-looking IT companies have been moving quickly to address the new opportunities. At Intergraph's International Graphics Users Group event in Alabama last month, the US company announced an initiative involving software giant Microsoft which, put simply, enables much-improved delivery and sharing of graphics and engineering information across the

Earlier this year, Intergraph had launched the first complete line of weh server solutions using the Windows NT operating system, and is also pushing its new document management system, DM2, as a way to manage all the technical information being shared



Focus on IT in manufacturing

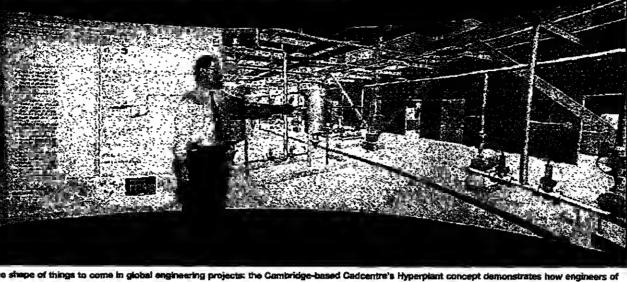
New ways to manage the supply chain and share information via the Internet

between different sites that are linked by the Net. "You need a way to manage these links," says William McClure, vice-president of Intergraph Mechanical. "Otherwise the Net could become a tool for distributing out-of-date data."

According to the Computervision study, one use for the Internet will be to manage "the extended enterprise" - another phrase that might have sounded unfamiliar in the early 1990s, although the concept of supply chain management was already firmly

Coming from the same stable as the "virtual" corporation or organisation, the extended enterprise model involves a strategic alliance between a manufacturer and its suppliers to develop products as one organisation of pooled skills and resources.

The relevance of the Internet to such a model was illustrated this spring with the launch hy American Software of Supply Chain Planning. This integrates the capabilities of its



The shape of things to come in global engineering projects: the Cambridge-based Cadcentre's Hyperplant concept demonstrates how engineers of

aupply chain management solutions with the Intercet to enable companies to manage their supply chain anvironments easily and cost-effec-

The product permits the simultaneous sharing of supply chain information. Data can be incorporated from the field, distributors and other resources using the Internet in real time. The information. says the company, can then be assimilated into forecasts, and results can be viewed and adjusted by all levels of the supply chain before the data is integrated with manufacturing or purchasing systems.

choose from a growing list of competing software products and hardware to support their extended enterprise models. "To manufacture in this environment, the last thing you need is a computer system that gets in the way," says David Reid, segment manager for the UK manufacturing and process sector in IBM's AS/400 mid-

Manufacturers will have to

As one might expect, Reid helieves the AS/400 has a atrong future in this environment partly because it comes as one offering integrating communications, a database and software applications from companies such as SAP, Marcam and J.D.Edwards. The capital cost might be higher than for a Unix-based system, he says, but the need for systems integration is avoided.

eanwhile, software that supports supply L chain management techniques has become a much higger market than some thought five years ago, and one forecast suggests it will be a \$1bn industry by the end of the century. "Supply chain management is set to become even more prevalent," says Arthur Vonchek, director for northern Europe operations at Manugis-

Manugistles has created a Supply Chain Architecture that draws together real-time data from a range of sources within and between companies, and integrates it so that view" of the entire chain. "Scalable client/server technology will see supply chain systems that offer a single. global supply chain image," says Vonchek. "Advanced software algorithms will enable automated Tights-out' decision making - and Internet and Intranet technology will ensure even greater connectiv-

ity hetween customers and

On the product development side, the need for sharing of accurate, up-to-date information is vitally important in an extended enterprise, because the model relies on suppliers taking responsibility for their section of the overall design. This is one reason wby the market for product data management (PDM) software is picking up so quickly, although it has only recently reached a level of sophistication that enables its use in an extended enterprise. A PDM package aimed at the extended

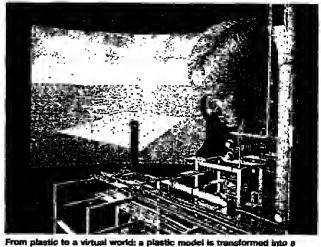
enterprise was launched ear-

lier this year hy Sherpa. Another important choice for manufacturers is that of an operating system, where again - the pace of change is accelerating.

"Over the past 10-15 years proprietary mainframe and minicomputer operating systems such as IBM, Prime and VMS have lost their markets to open systems solutions hased on Unix variants, followed by PC solutions running under MS-DOS and Windows." says Richard Longdon, executive director of Cadcentre, the Cambridge-based engineering software developer.

One of the most significant recent developments has been that of Windows NT, the Microsoft operating system for which some 800 software appplications are now available for the manufacturing sector, ranging from mechanical design anelysis to enterprise resource planning.

Windows NT took a while to gain commercial acceptance. but sales picked up early last year. Now, according to Rod



realistic plant, using Visuality, Cadcentre's group visualisation system

Blackwell, Microsoft's UK husiness manager for manufacturing solution providers, Winit can provide an enterprise system, an engineering application or a specific shopfloor solution. Version 4.0, due for release this summer, will feature the Windows 95 "look and

The development of Windows NT led, in turn, to Microsoft BackOffice, a set of integrated applications for the server including the operating system itself, relational datase, and connectivity to IBM mainframe and mldrange systems and oetworked PCs. When Windows NT and BackOffice is combined with

the front Office suite and Windows 95, says Blackwell, manufacturers can achieve "integrated customer-oriented supply chains capable of delivering real-time information across the corporation through a single consistent user inter-

ne important testing ground for Windows NT is in computeraided design, (Cad), hecause, as Longdon notes, intensive graphics applications stretch computers and their operating software to their functional

According to Longdon, Windows NT will become a significant operating system for Cad. But, be says, suggestions that it would eradicate Unix as a Cad operating system need to be taken with a grain of salt:

"Communication between operating systems is oo longer a major issue: it is compara tively easy to take data from a PC, for example, use it on a Unix machine, and then send it on to a mainframe to be stored

in an Oracle database. Some software suppliers feel so confident about Windows NT that they have ported virtualty their entire range of applications software to the Microsoft operating system, This is what has happened at intergraph, where chief execu-tive Jim Meadlock says NT is 'a better core product" than Unix, "Any small software developer that is not writing 32-bit software for Windows and NT is undone," he says,

What should users in industry make of all this? Mike Wood, director of manufacturing practices at software vendor Ross Systems, sums it up neatly: "Manufacturers are not really interested in technologies, be it Unix or Windows NT," he says. "They just want to know that they won't be fied into any one system that might be obsolete in five years' time." □ Further information from American Software, tel UK (0)1932 855554, fax 854563; Cadcentre, tel UK (0)1223 556655, fax 556666; Computervision, tel UK (0)1203 417718, fax 419137; IBM AS/400 business, tel UK 0800 400000; Intergraph (UK) tel (0)1793 619999, fax 618508, Man ugistics tel UK (O)1344 306400, fax 306480: Microsoft 01734 270001, fax (0)181 242 4200 (Text 100): Ross Systems, tel UK (0)1604 30050, for 30495.

The make-to-order market - By Andrew Baxter

# Problems begin atter the contract is won

Because of a lack of systems integration, many manufacturing companies have problems translating proposals into live contracts, especially when it comes to creating production plans

anufacturere can of hidding a third admitted hroadly be divided difficulties in hitting tender hroadly be divided into two camps mass-production companies huilding discrete products on a repetitive basis to stock and sell, and "make-to-order" companies which build products that meet the specifications of

a single customer.
"Make-to-order" is the fastest-growing segment of manufacturing - in the UK alone, it is worth about £22bn a year, according to a recent survey hy Benchmark Research. Another research company. Boston-based Advanced Manufacturing Research, estimates that about 25 per cent of the 32.8bn world manufacturing nanagement software market falls within the "make-to-or-

The IT demands of the "make-to-order" market, normally medium to large-sized engineering companies making everything from buses to robots, can be very different from those of the mass producers. According to Massachusetts-hased Visibility. wluch produces a "make-to-order" software package of the require integrated information systems that manage a lifecycle of highly interrelated processes while providing the agility to respond to changing customer needs and market

Yet in some parts of the make-to-order cycle, the use of IT is very limited. Successful bldding, obviously, is crucial to success for "make-to-order" producers but the Benchmark survey claimed that lack of computerisation and inefficiency in bidding for contracts was costing British industry as much as £1hn o year.

Only half of the 180 companies questioned used any form of computer software for the hldding process, and then only sasic word processing, spread-sueet or database packages for part of the process. The remainder rely on paper-based filing systems, so every pro-

nies monitor the actual costs

and 30 per cent said they had less time to prepare bids. Half said that missing deadlines seriously affected their chances of winning contracts, while the ability to handle contracts was a hig consideration in deciding whether to bid at all. On average, the survey found, it took five people three days to prepare a contract proposal, so a significant amount of time is wasted on

deadlines all or some of time,

The problems do not end, however, with winning the contract. Because of a lack of systems integration, 75 per cent of the companies had problems translating proposals into live contracts, especially when it came to creating production plans.

The Benchmark survey was commissioned by Cincom Systems to research the need for its Acquire software package, launched last year to automate and manage the sales cycle process from prospecting to estimating, product configuration and proposals. "A lot of people told us that

their business had changed dramatically - they now have very short lead times to tender for highly-customised contracts," says Alastair Sinclair, director of Cincom's European operation. "Most of the hidding preparation is still being done almost on the back of a cigarette packet and if Acquire can help a manufacturer win two contracts out of six, rather than one, it would

make a dramatic impact." The Acquire package costs from £20,000 for a basic system, and Cincom hopes purchasers will obtain a quick payback as the survey research showed that bidding costs account for an average 12 per cent of contract value. Users can build a complete

library of data and product configurations to reduce continually the time and effort need to produce proposals. If a hids turns into an order, the Only 50 per cent of compa- information can he carried straight through into ERP (enterprise resource planning) systems sold by Cincom or other vendors. If the bid falls, it becomes part of the historical data that will be used to prepare the next one.

Sinclair says he is pleased with the take-up of the system aince its launch. European customers have included Esec. which makes machines for the semiconductor industry, tractor maker Stevr-Daimler-Puch and Endress & Hauser, the German valve and pump producer. German and French language versions were due to be launched this month with a Swedish version following in

A separate market is opening up, too, for the sales configuration element of the Acquire package, aimed at makers of high-volume, highly configurable products such as personal computers.

typical customer is GEC Alsthom Low Voltage **L** Equipment, which is currently in the pilot stage of using the Acquire package. It hought the software mainly for its ability to configure products, and especially air circuit-breakers.

In this market, customers increasingly want a quick quotation on a product that comes in thousands of different permutations but is huilt from the same few hundred components. The company can now produce a quotation in a few minutes to a customer's specialised request, where previously it might have taken two hours.

Visibility, meanwhile, already has around 200 cus-tomer sites worldwide for its product, which is aimed at the enterprise-wide IT needs of "make-to-order" or "agile" manufacturers - everything from sales and quoting to engineering, production and after-sales service. Customers include Pratt & Whitney.

Sulzer Pumps and ABB. Visibility, founded in 1988, owes its success partly to "building from the ground up" for the make-to-order market. rather than adapt a system designed for mass production. says Michael Dunn, president

and chief executive. This is emphasised by Michael Peirce, chief executive of Duhlinhased Mentec, which sells Visibility in the UK and ireland and also has a stake of Serve.com

about 15 per cent in the Massachusetts company. "The day has ended when a single package could fit both types of manufacturing," he says.

Another element in Mentec's growth has been its focus on developing implementation technologies as much as the software package itself, says Dunn. Some of the user industries' past disappointment with systems that failed to meet expectations was because of failed implementa-

tion, be says.
Visibility, which is essentially a one-product company, has seen sales surge to an expected \$32m this year. For next year and 1998, sales should be \$45m and \$60m respectively, says Dunn. Mentec's sales growth from

Visibility should be similar. says Peirce. "It's our flagship manufacturing product and the development of Visibility into an enterprise-wide prod-uct will keep our hands full." The relevance of products from companies such as Visibility, Mentec and Cincom could become broader as the lines hlur between mass production and make-to-order.

Large companies that have traditionally espoused repeti tive manufacturing are increasingly looking to become agile and order-based too. But that is hard to achieve, and - predictably perhaps - Peirce says any company that tries it it without a dedicated make-to-order software package could end up "dead in the water".

Cincom Systems, tel UK (0)1623 542300 542310: Mentec. tel Ireland 3531 285 8444, fax 3531 285 2803: Visibility, tel US 508 694 8000, fax 694 8020

#### Survey on IT in manufacturing

The results of a pan-European survey on the impact of IT in electronics manufacturing will be featured in the FT-IT Review in September. The survey, partly funded by IT vendors, is being carried ont by analysis at Cambashi in Cambridge. For details, call Brian Gott or Mike Evans at Cambashi on +44 (0)11223 460 439, fax +44 (0)1228 461 055; e-mail, 100431.3342@Compu■ Constructional steelwork sector • By Andrew Baxter

### Boost for the building industry

European project advantages of using IT to integrate manufacturing and management processes

we can an insular craft industry that is made up of many small and medium-sized companies, and is perceived as not investing enough in technology, he turned into a state-of-the-art integrated manufacturing sector?

One approach is to introduce computer integrated manufacturing techniques and develop the related enabling technology and standards. This is the aim of the Europe-wide 'CIMsteel' project, which is aimed at placing the European constructional steelwork sector in a leading position to compete with overseas rivals and alter-

native construction materials. The Ecu45m (\$56m/£35m) Eureka project is about tailoring for the constructional steelwork industry the kind of comretug integrated manufacturing systems successfully used within the sero-space, automobile and general manufacturing industries. To achieve this, 45 organisations including designers, fahricators, software houses, research and trade organisations and academic institutions bave come together from eight par-

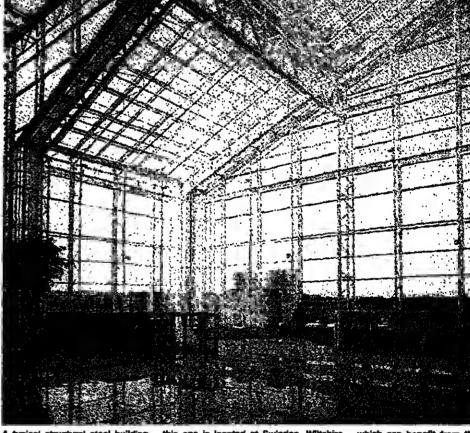
ticipating countries. In the UK, the project has heen partially funded by the Department of Trade and Industry, with Taylor Woodrow, the construction group, acting as lead organisation The other countries involved are Austria, Denmark, Finland, France, Italy, the Netherlands, and Sweden.

Among several important goals, the project aims to: ☐ Raise awareness within the industry of the business advantages of using IT to integrate design, manufacturing and management processes and cultivate the concept of "managing information for

☐ Develop the enabling technology required for the exchange of technical information between different software products used by different organisations, leading to international standards. □ Exploit the opportunity

provided by the introduction of "Eurocodes" to develop integrated and harmonised design procedures, guides and aids for use in the collaborating coun-

lncorporate the design



A typical structural steel building - this one is located at Swindon, Wiltshire - which can benefit from the

procedures and information exchange technology into new world-class software. □ Rationalise the provision

and specifications of materials and products as part of the ☐ Develop advanced data-

bases and management information systems which are compatible with the emerging □ Develop and demonstrate a cost-effective robotic welding

investigate the wider challenges and issues facing the industry.

ith such broad aims - and a large number of participant perhaps not surprising that a project conceived in 1987 is concluding only this year and has taken up some 400 manyears of work. Dr Fikry Garas, CIMsteel project manager and leader of advanced technology projects at Taylor Woodrow Construction, points out that Cimsteel is "unique in terms of its value and scope, as it is trying to eddress the integration of the whole building proj-

The project began in earnest in 1988 with a definition phase, followed three years later hy the start of an implementation phase. Last autumn an important milestone was passed with the launch of CIMsteel Integration Standards (CIS) by Tim Eggar, the UK industry minis-

These are a set of standards for the direct digital exchange of engineering information between the diverse software packages used during the evolution of a steel framework.

The key components are a series of standard specifications for information models which help software vendors to write an export and import translator into their product. These can convert or retrieve the project data as a CIS "neutral file" from which data can be picked up and read hy any other CIS-approved software

The translators do not affect the software, so users can continue to choose the best package for their requirements. But hy using the translators, vendors and users will not need to liaise to ensure compatibility.

Using the standards, it is hoped, will increase productivlty. Time will be saved as information will not heve to he regenerated, quality will improve because the errors introduced in data re-entry will be eliminated, and the collahoration between pariners, suppliers and clients will he improved. Garas says the stan-

dards were the main focus of the CIMsteel project, but there have been other developments. some of which are already available. For example, the project has supported the preparation of best-practice documents which will be widely used by the steel construction

industry. With the project formally closing this year, it already has a critical mass to ensure the intentions can be turned into reality, says Garas. At the time of the standards launch, 11 software vendors had committed to put products on to the market that meet the standards, and more have made commitments since then.

Also, a number of end-users had begun demanding from their IT suppliers that they follow the standards. "This year, we will see the Implementatioo of the standards in real-life

projects," says Garas. The momentum will also be sustained through events such as workshops, seminars and demonstrations of how the standards are being applied. One such demonstration at a recent DTI event was of a real industrial project being engineered by Foster Wheeler

Energy in one of its UK offices. Further information from Dr Garas, tel UK (0)181 575 4505 or email f\_garasiatel/consult.co.uk

Advances in computer-aided design . By Mike Farish

# Variations on a theme

How software was used to redesign the Polariod Spectra camera within specific criteria

ben a London-based design consultancy, Pankhurst Design & Developments (PDD) was given the job of redesigning the Polaroid Spectra camera, the fact that it bad to start from an

existing design was little help. The project manager at PDD, Paul Ferris explains that the camera bed originally been designed back in the early 1980s, but as the mid-1990s neared. Polaroid felt the camera needed a complete overbaul, especially in the light of plans to launch it into the US and Asian markets In particular, the camera

#### New software is accelerating product development

was perceived to have an "old look" and poor ergonomics, with the handstrap and eye-cup needing to be made much more user-friendly. But at the same time, a key part of PDD's brief was that the redesigned camera should, as far as possible, be constructed in much the same manner as its predecessor using similar fabrication techniques and compo try, such as snap-clips, lugs

In the industry phrase, PDD had to retain as much as they could of the original "design intent". The company's use of computer-aided design (Cad) technology, however, made surmounting these restrictions much easier than it might have been otherwise.

The company uses the 1-Deas three-dimensional modelling package from SDRC. The software uses a "variational" approach by which users can write equations that represent

various "constraints" that limit or condition the design options open to them.

Users can, for example, write into the software instructions that in any particular design, some specific element - a wall or a spar - must always meet another element et a set angle or that it must be twice as long or three times as thick.

Any such geometrical condition can be set provided it can be represented as a mathemati-

Peul Ferris says that after constructing a model of the existing camera within the software, PDD was able to experiment with new configurations easily and quickly by stipulating a few relatively simple constraints, largely the maintenance of some key absolute dimensions and the relative relationships of some oth-

"When a wall was extended, the clip behind it would automatically stretch accordingly." be says. When the job was complete, "all of the external faces of the camera had been

In the event, the redesign took 37 weeks to complete, but without the Cad software's ability to manipulate the geometry in a variational manner, Paul Ferris estimates the project would have taken half as long again.

The capability that that proved so useful to PDD is now embodied in virtually every main Cad software package -but to different degrees, in slightly different ways and under different names, such as "parametric", "adaptive" and 'dynamic" modelling. But all involve the same basic discipline of writing equations to set constraints within which designers have the freedom to experiment and have the software show them bow changes in one area of a design will affect the rest of it.

These new Cad technologies have been seeping on to the market for several years, Many companies are now getting to grips the potential they hold both for accelerating product development timescales and



enhancing design quality through greater freedom to experiment. Just how hig an impact they can have on the design of completely new products is still unclear, but their utility in manipulating existing design data to produce derivative products is certainly considerable.

Hornhy Hobbies in Margate, for instance, manufactures model trains and cars, for use in electric train sets and the popular Scalextric car racing game. By definition, its prod-



Polaroid's new digital camera, the PDC-2000 range, is aimed at commercial customers, and has been under development for four years. Prices start at \$2,985

ncts, at least in external appearance, are miniature facmiles of their full-size equivalents. The company bas. for instance, just released its model of the Eurostar Channel Tunnel train.

But according to Mike Walters, product engineering manager, adapting existing design information to Hornby's own requirements is far from Even where it receives CAD data from the manufacturer of the real-life car or train this is often incomplete or segmented in a way that limits its usefulness. Homby, he points out, is aiming to produce a single, consistent Cad representation of the whole model surface that can be used to drive manufacture of the required mould-

Within the last year, Hornby has therefore installed the Proj Engineer Cad software system from Parametric Technology Corporation (PTC), the US company widely regarded as ploneering tha constraintbased modelling approach.

The company is fully exploit-ing the Cad system's ability to store complete 3D design data. It is, for instance, using 3D Cad information to drive a stereolithographic "rapid prototyping" process, which can bypass the former need for handmade wooden models of its products to support tool-making. In addition full colour Cad images can be used to accelerate the approval process by the marketing department.

The company is also beginning to explore how it can exploit the software's parametric modelling capability.
Intriguingly, Mike Walters
says one obvious application

will be in validating the action of the pistons and drive-rods on model steam trains. The variety of wheel sizes, axle lengths and configuration types currently make this a very demanding task. But be is confident that the leading-edge CAD capability, the company now possesses will soon make much simpler the job of replicating the age of steam.

Built in record time: the Darkster, the world's most advanced unmanned rec

50 designers from Lockheed and Boeing started work on the project. A significant factor in this time-saving was the use of Catia Cadcem softw run on IBM RS/6000 workstations and servers. Derkstar is the first military abroraft designed without the creation of physical de-

Production costs - By Artirew Baxter

ven at the earliest stages of designing a product, companies want to know how much it is going to cost to manufecture. Until recently. Artificial intelligence provides there has been no quick, accurate way to do this and the only solution was an estimate or guestimate.

However, an innovative software package launched to the US two and a half years ago by Massachusetts-based Cognition Corporation uses artificial intelligence to solve the problem. The software, Cost Advantage, is sold exclusively in the UK by Milton-Keynes PS Indus-

try Group.

The software takes basic "back of the envelope" designs and gives an early indication of how much a new product will cost to develop and manu-facture. It then provides continuous feedback on cost and producibility as the design evolves, updating the cost as

the design changes. At its heart is a series of process models which are used to build up a knowledge base on every type of labour and material that is likely to be involved in the manufacturing

and assembly process.
Mike Cronin, Cognition's chief executive, points out that because the software is a rulesbased expert system, companies can link it with their own

#### Farewell to guesswork nental markets, while PSI

also be used with Cognition's

process planning, estimating

comparative cost estimates for different manufacturing methods

corporate knowledge-base and question it on why a product cost e certain amount to make. This gives it a clear advantage over traditional spreedsheetbased methods of cost calcula-

But says Cronin, the package has caught on so quickly not just because of its functions - just as important is the way it can be linked to customers' existing Cad software. Indeed, most customers purchase the software as an add-on.

The software will work with any parametric or feature-based solid modelling system i.e. one that recognises, for example, a round hole in a design for what it is, and not simply as a circle - and has already been fully integrated with Parametric Technology's

Pro/Engineer software. To use it, a designer would pull down a menu, and click on a button. The software first checks that the product can be manufactured on the user's factory equipment, then calcu- new pushing into other conti-

launched Cost Advantage for the UK market at the ICAT'96 show at Birmingham's National Exhibition Centre in lates the cost. Integration with SDRC's I-DEAS Master series March. The initial response was "absolutely staggering," says Russell Howarth, PSI's sales and IBM's Catia software will follow later this year, says Cronin Cost Advantage can

own pre-design analysis soft-ware, Mechanical Advantage. At the other end, Cost Advantage can be fully integrated with process planning systems, linking particularly effectively with PSI's own SuperCAPES computer-aided

and costing system. lost Advantage was developed from a prod-. ✓ uct called Cost of Manufacturability Guide, made by the former Cognition Inc. In the US, users of Cost Advantage Includa Xerox, Texas Instruments and Boeing, while European customers so far are mainly French - such as Peug-

eot in car parts and Schneider in electronics. From its European headquarters in France, Cognition is ers were particularly inter-ested in the software, which costs about £20,000 a seat. Users in the US are finding that they can now produce cost estimates up to 85 per cent faster than with alternative meth-

and marketing director. Aero-

space and automotive custom-

But there are other benefits, too, says Cronin: the software can be used to produce comparative cost estimates of different manufacturing methods. A user could quickly establish whether it would be cheaper, for example, to make something out of sheet metal, by machining it or by using injection moulding.

Cost Advantage runs on Unix but e Windows NT version will be evailable probably by the end of the year, says

☐ Cognition Corp. tel US: 617 271 9300. fax 617 271 0813



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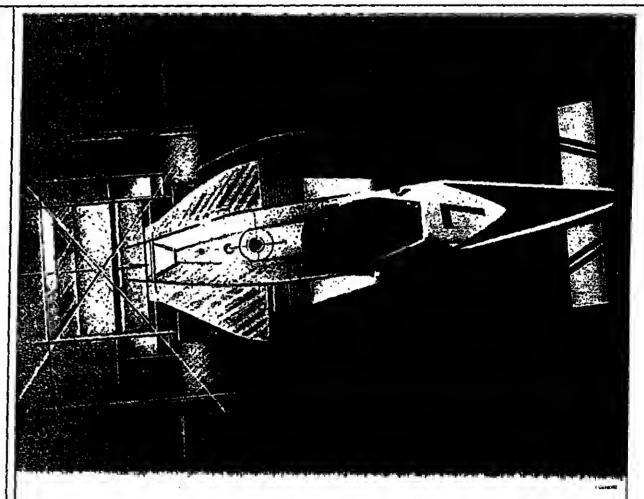
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changing quickly and unpredictably. Your business needs to evolve and become more flexible and reactive. You need to make the strategic decisions which will inherently change your business processes. Who is capable of putting your decisions and ambittons into practice? How, as a

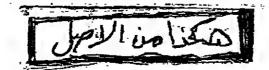
result, will you reorganize your information system? How will you implement the applications that can be adapted to the personality of your organization? CGI has, within the IBM group, a worldwide mission in the area of application solutions. Designed and developed with current client/server, Lotus Notes and Internet technology,

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document and the key words within them. Change of staff

within a company can lead to the loss of the keywords them-selves and with them access

to valuable documentation. Joe Witherspoon was impressed when be saw the

capabilities of Excalibur EFS. The system eliminates the need for manual indexing. keywording and its associated

potential loss of information by automatically indexing every character oo every page. Data can be retrieved sim-

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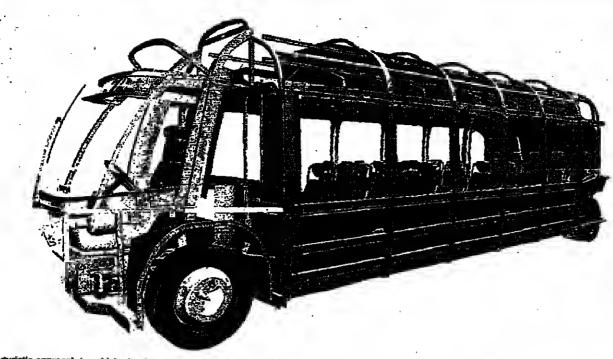
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seign time, using only half the staff of a typical design project. Volvo used Computaryision's CADDS 5 software system, so that 75 per cent of

■ Product data management systems • By Andrew Baxter

## A rapidly evolving market

Companies are under increasing pressure to shorten design and development cycles

emand is continuing to grow for product date management (PDM) software systems as more companies realise the benefits they offer. According to CIMdata, the market research company, worldwide sales of PDM software and services will exceed \$850m this year and grow at a compound annual rate of 23

PDM software bas been available for about a decade, but its roots extend 15 years earlier to the original MRP (materials resource planning) techniques for man-ufacturing products efficiently. From MRP evolved engineering or electronic data management (EDM), which uses computer technology to help manage documents, for example those used by engineers in prod-

That, in turn, grew into PDM, which is used to manage, organise and provide instant access to the vast amount of information needed at all stages of product design, development, manufacturing and

support. in the mid-1990s, the PDM market is still a long way from maturity, and the market continues to evolve as manufacturers' requirements change. As Sherpa, one of the biggest PDM software vendors, says, the emergence of the "virtual" or "extended" enterprise makes additional demands on PDM as manufacturers establish closer links with customers, partners and suppliers, and subcontract more elements of the product lifecycle to outside organisations.

To make collaboration work, however. manufacturers need to do more than share data, says Sherpa: they must extend their processes to partners and enable true electronic collaboration. Also, while these trends are making development cycles more complex, companies are under which Centra says will be particularly use-

increasing pressure to sborten those ful to manufacturing companies.

Recent new products from the PDM vendors are aimed at addressing some or all of these challenges. Earlier this year, Sherpa launched an enhanced second-generation PDM system called PDMII aimed at helping companies meet demands for a more comprehensive approach to management

It supports the entire product lifecycle. from creating initial concepts through designing, planning and manufacturing to selling and supporting products; manages a wide variety of data types, and has a much wider user base than would be the case in EDM or earlier PDM; there could be thousands of users in the extended

PDM software gives instant access to a vast amount of data at all stages of the production process

enterprise, including various suppliers and partner organisations, at tens of different-

An important feature of PDMII is so-called "object-based application libraries" which are the result of the encoding by Sherpa of its knowledge of PDM processes. Companies will be able to select objects that provide the functions they need and quickly assemble them into specific applications, without having to write custom code to create or connect the

Also this year, Centra Technology introduced Release 3.0 of Centra 2000, its flagship EDM/PDM software suite. Advances in the new version include the introduction of alternativa methods of deriving multiple products from a generic design, through a Product Structures facility

Other features include "close-coupled interfaces with two popular Cad packages, AutoCAD and Pro/Engineer, allowing access to drawings and models to be managed from within Centra 2000 during revision cycles; support for databases distributed over multiple servers; and support for both Windows NT and Windows 95, the Microsoft operating systems.

Meanwhile one of the bigger players in the PDM market, Hewlett-Packard's mechanical design division, has launched HP Precision Engineering (HP PE)/Work-Manager for Workgroups, one of the first PDM solutions to be specifically configured for workgroups.

The software is designed to be easily customised and allows all product data to be available to workgroup and team members, facilitating the concurrent engineering process. As well as being designed as an open system, it is fully integrated with HP's PE/ME10 2D design and drafting system and Its PE/SolidDesigner 3D solid modelling solution.

Finally, in April, Adra Systems intro-duced version 4.0 of Matrix, its object-ori-ented PDM software which features a number of important enhancements on previous versions, aimed at enterprisewide information management. These Include a World Wide Web/Internet enhancement, support for additional plat-forms, and expanded international support enabling Matrix to accommodate the widebyte characters found in many Asian ianguages. It also has several tools to enhance productivity and an expanded developer's toolkit. In the UK, Huntingdon-based Quorum Data Management is the principle reseller of Matrix.

☐ Contacts: Adra Sustems, tel US 508 937 3700, fax 508 453 2462; Centra Technology, tel UK (0)1203 537102, fax 537032; CIMdata, tel UK (0)1203 441129, fax 451919; Hew lett-Packard mechanical design division, tel UK (0)1344 362091, fax 362070; Sherpa, tel US 408 433 0455, fore 408 943 9507; Computervision, Coventry, tel UK 01203 417718.

■ Computer-aided production engineering • By Andrew Baxter

# How to get the best out of production lines

IT helps to set up machines and give improvements in • output of up to 22 per cent

hile product design and manufacturing are already hearth are already heavily computarisad, there is an important area in between where IT has not penetrated so deeply - nor are its benefits so well understood.

This is the area called production engineering, preparing and setting up machines to produce the components that have been designed electroni-

"In the other two areas, a lot

of money has already been spent, and if you invest further US TO MAK you are only tweaking your performance," says David Blunt. "If you spend money on the area in between, you can have a big impact, as less has been done previously." Mr Blunt is UK country man-

ager for Israeli-based Tecnomatix Technologies, which claims to be the world leader in the market for computer-aided production engineering (Cape) software. The company, which went public in the US in 1993, had sales last year of \$33.lm, more than half of which were in Europe. Its aim, says marketing director Lee Alnes, is to plug the "huge gap" between design and manufacturing by providing IT tools for production and process engineering.

Tecnomatix is probably best known for its Robcad software launched in the early 1980s and widely used in the automotive industry, which works out and simulates how robots will perform a task on the production line, ensuring they do not collide with the product, other

A second product, Valisys, is a quality engineering tool for ensuring that parts are manufactured in accordance with the design. Some of the experience gained in developing these products have been put to good use in creating Exaline, which is designed to enhance the production capa-

bilities of printed circuit board (PCB) assembly machines and lines used widely in the electronics industry. Exaline, formerly called Paragon, stands for "expert assembly line." Manufacturing PCBs

is a bighly automated business: robots from a line of different machines, not necessarfrom the same manufacturer, pick and place groups of components as the board moves along, with perhaps a handful of components inserted by manual operators at the other end.

Some PCB manufacturers. however, are still using manual methods to work out the best way of doing this for each job – keeping each machine busy, ensuring the robot or the component it is holding do not collide with a component that has already been placed.

Raline, says Tecnomatix, not only saves time, reducing to perhaps half an hour a laborious trial-anderror task that can take days to complete, but also does it better. This is where high-volume PCB manufacturers can obtain big benefits from the

If a board can be produced in 50 seconds rather than 60, the manufacturer is making much better use of its expensive capital equipment. The software will work out, for example, that a second can be saved by turning the board 90 degrees at

"You would not bother with that if you were doing the set-up by hand," says Alnes, "but if you cut ont a few seconds here and there, it all adds

The software works by defining and redesigning PCB assembly lines in an off-line "virtual manufacturing" environment. It takes the PCB design data, automatically separates groups of components embly machine or manual station, balances the workload of machines and stations whose capabilities overlap, then optimises the performance of each machine, using dedicated algorithms (mathe matical formulae) and detecting any placement collisions.

Then it graphically simulates the assembly machine and manual statton operations, allowing the user to zoom in to areas thet need further inspection and get exact cycle times for different parts of the process. Finally, it generatea machine programs, set-up instructions and other reports and drawings needed for the manual and automatic assem-

bly operation. The software has allowed PCB manufacturers to get improvements in ontput of as much as 22 per cent from their machine lines, although the gains are smaller for the latest state of the art PCB machines. For a high-volume PCB producer, such gains could be very important, while the dramatic reduction in set-up times would be more significant for a more specialist, low-volume

supplier. For obvious reasons, the manufacturers of PCB machines were initially wary of Exaline, as it could be viewed by their customers as an alternative to buying an

extra machine. However, the machine-makers have since realised that, in the long-run, a software product that improves their customers' output is use ful for them too. A typical Exaline system would cost #50 000-£75,000, which, Blunt admits, is a lot of money for software.

The problem for Tecnomativ however, is not the cost but that customers will not believe the claims made for the system - for example, that it could in some circumstances pay for itself in five weeks. "Time and again we have to prove ourselves," says Blunt, "but we are now building up lots of ref-

evelopment work on and the first sales were made two years later. So far most sales have been in North America, but Tecnomatix is expanding its presence in Europe by opening offices dedicated to selling and supporting

These are at Staines in the UK and Munich in Germany. and a French office where will open in Paris soon.

The first generation Exaline software works out how to do a single job on a line of machines, while the second generation - just launched can work out how a line can handle several different PCB boards at once. The third generation will bring factory planning to the PCB industry, working out the best way for several machine lines to handle dozens of different jobs. Work on that is already under way, says Alnes, and it could

be ready in a year. Contact: Tecnomative Technologies, tel UK (0)1784 898400 fax 898500. Alternatively, email. ■ Information retrieval: Excalibur software • By Jane Stirling

### **Frogs** have a lot to teach us

Software with the power of pattern recognition is a boost for

manufacturers – and politicians

The ability of political parties

to excavate information from

a database for fast rebuttals can be vital to success in the cut-and-thrust of politics. An electronic filing system (EFS), dubbed by UK newspapers as New Labour's "key weapon", the Excalibur EFS is no ordinary information retrieval system. Nor are its uses limited to excavating through mountains of information in the battle of party

Excalibur EFS is an off-thesbelf software tool for use across the board, in any company or institution where there is a need to store and retrieve information rapidly, easily and accurately.

politics.

Developed by a biologist, John Dowe III. Excalibur EFS has interesting origins. The new technology is based on adaptive pattern recognition processing (APRP), which exploits - for example - the way that frogs recognise their food, distinguishing edible fly species from similar ones that are not part of the diet.

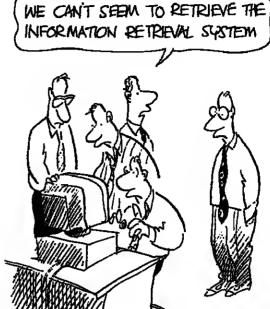
APRP allows the rapid automatic indexing of digital data from a variety of sources. including paper, electronic and sound, and is based on conversion of information to binary patterns, in retrieval, EFS searches for a pattern in digital data and not for spe-

All successful businesses

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are inumdated with information from numerous sources. whether hand-written, wordprocessed, graphical or e-mail. One such company is Domnick Hunter, the Durhambased international manufacturer of nitrogen gas generators for deep-freezing and high-quality filtration, separation and purification products for compressed solids, liquids

Tha process division bas thousands of stored documents relating to every conceivable aspect of company business, including test reports, customer-trial information, correspondence, purchase orders, requisitions and design drawings.

#### Time saved

According to Sharon Pringle, who has managed the installation of Excalibur at Domnick Hunter, "actually getting hold of a document could take anywhere from 15 to two weeks. Now, with Excalibur EFS up and running, it takes a matter of seconds every time".

The needs of the process division were simple - a "paperless office" with fast and information accnrate

retrieval. Excalibur EFS pro-

vided a simple and effective

The difficulty in retrieving

information on past projects

was costing Domnick Hunter

time and money. New propos-

als for potential customers had to be started from square

one, instead of re-using rele-

vant information from earlier

The ability to locate docu-

ments quickly and accurately

was an option that would

greatly reduce time to market

and increase customer satis-

faction through improved effi-

group information services. Joe Witberspoon, had

explored using a high-tecb

database with keywords as a

means of retrieval, but all

such traditional document

retrieval systems bave prob-

lems. With keywording, infor-

mation that becomes relevant

Subjective choice of the key-

word, or its mis-spelling, can

lead to further information

loss and the need to index

information requires a sub-

stantial input of time by a per-

son with sufficient under-

standing of company business

to assess the relevance of each

at a later stage, may be lost.

Previously, the director of

ply by keying in significant words and so literally any information in the document can be retrieved.

#### New feature

Excalibur EFS has one more unique feature in the world of information retrieval systems: until now, optical character recognition (OCR) processing errors have represented one of the most difficult challenges to the successful implementa tion of document imaging.

The occurrence of such errors are often underesti-mated and, depending on the quality of the scanned document, as many of one-lifth of all words might contain a character fault, ff this includes the keyword, the document is lost. By searching for a digital pattern, Excalibut EFS can retrieve information even though words are misspelt. Termed "the fuzzy search engine", errors as great as "bolsifmatorialz" can be recognised as "bills of materials" and relevant documents

With a view to the future. the process division intend to utilise Excalibur's newly introduced Retrieval Ware, which will enable its worldwide salesforce to use their laptops to access the Interoet to seek and retrieve information via Netscape.

Since installing Excalibur EFS and emptying filing cabinets, the process division at Domnick Hunter bas been able to create a lot of premium office space. According to Mr Witherspoon: "Ignoring the time saved in locating information, just getting rid of the paper has justified our expenditure,"

The paperless office, hitherto the stuff of dreams, is

# **CLASS OF ITS OWN**

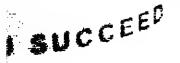


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JECTS.

The virtual manufacturer . By Geoffrey Wheelwight

D etailers are already setfronts that only pass on ting up electronic shoporders to whichever contracted manufacturing operation they want to supply the goods, using a new system, developed by computer database software giant Oracle, that it is about to embark on a significant new technology trial of an electronic commerce system for the Internet.

Code-named "Project Apollo", the goal is to produce a system that will not only allow customers to buy goods electronically over the World Wide Web, but will also permit retailers to electronically pass on customers' orders to suppli-ers and then on to whatever company will make delivery of

According to Mark Jarvis. vice-president of marketing for Oracle's server technologies, the company will start the trials worldwide this summer in conjunction with VeriFone - a global provider of transaction automation and Internet commerce solutions, used to deliver electronic payment services to financial institutions, retail merchants and consumers - as well as government agencies, healthcare providers and benefits recipient

News of these trials follows hot on heels of an announcement earlier this year about a strategic alliance between Oracle and VeriFone. The companies say the alliance will create an integrated end-to-end Internet payment system that they claim is safe for open elec-

The system, which is likely to be avilable by the third quarter of 1996, is intended to allow businesses and consumers around the globe to purchase products and services quickly and securely over the World Wide Web.

The alliance is focusing on combining Oracle's WebServer software with VeriFone'e secure payment software, to produce the first payment-enabled WebServer on the market. Oracle and Verifone say that using this electronic commerce product, merchants, banks and other financial providers would be able to offer an open online payment system to

handle internet transactions. They also claim that this payment-enabled WebServer would mark the end of window-shopping-only on the Internet. Currently, Web users view an endless variety of products and services offered by vendors around the world but a consistent and secure payment capability does not

trickle today, but it will rap- scale electronic commerce,"

# Coming soon: goods made to order, via the Internet

The 'virtual manufacturer' could soon be an increasingly popular business entity as electronic commerce makes it possible for consumers to buy 'products to order' via the Internet

issue of handling large volumes of transactions is solved," says Dudley Nigg. executive vice president of Wells Fargo Bank, a key customer of both Oracle and Verifone - and e participant in developing the alliance.

This announcement paves the way for commerce enabled business on the Internet. Wells Fargo Bank is looking forward using Oracle WebServer, commerce-enabled by VeriFone payment software.

Oracle and VeriFone intend to integrate VeriFone's Internet payment software with Oracle's WebServer - and they says that it will allow merchants and husinesses to accept payments via the internet from consumers purchasing products or services.

VeriFone and Oracle also intend to incorporate the Veri-Fone Pay Window software into the Oracle PowerBrowser an embeddable Web browser - for use by consumers. Veri-Fone's Pay Window software would provide transaction options, such as different credit cards, and make the Oracle PowerBrowser software more user-friendly without excluding users of third party browsers from the transaction

Oracle and VeriFone say they also intend to develop an Oracle/VeriFone Internet Gateway that would be used by financial institutions and related businesses interested in accepting payment transactions over the Internet.

VeriFone will provide the software that offers secure payment-processing solutions, and Oracle will provide the Web server and systems integration services. The companies say that this Oracle/VeriFone Internet Gateway would be designed to support all standard compliant software supplied by Internet Commerce providers, such as the SET standard proposed by Master-

"This alliance between Oracle and VeriFone is the first to "Internet commerce is at a make the Web safe for broad-

idly become a torrent once the claims Ray Lane, Oracle's president of worldwide operations. "Oracle's WebServer combined with VerlFone's payment processing expertise creates an

concerns about the viability of Internet commerce.' Both companies say they are strongly committed to open solutions and intend to work with existing systems such as credit card transaction protocols and new ones to be developed in the future, such as micro-payments and chip

The companies also insist that they do not intend to

Worldwide trials for Project Apollo, for 'products to order' via the Net, begin this summer

build a proprietary system based on charging vendors or customers per transaction. Instead, they say their aim is to provide the transaction infrastructure and gateway to bring existing electronic payment systems to the Internet.

"Providing our payment technology through Oracle's WebServer moves us toward our goal of making the Internet commerce-ready for the huge volume of transactions we see on the horizon," says Mr Hatim A. Tyabji, chairman, president and chief executive officer of VeriFone.

We want to repeat in the virtual world what we successfully achieved in the physical world with our point-of-sale systems. We plan to accomplish this by universally installing open and interoperable payment technology that is secure and easy to use." Initially, the two companies

ules with two different levels of capability: The first system would use VeriFone's basic merchant-payment capabilities,

WHAT'S HAPPENING IN THE

**MULTIMEDIA INDUSTRY THIS WEEK?** 

**MULTIMEDIA** 

-enabling merchants to use Web servers for Internet credit card processing and automatically to handle authorisation, credits and settlements, and basic payment administrative manage-

The enhanced system, for larger and more complex merchant requirements, would include extensive administrative functions such as transaction reporting. VeriFone intends to extend functionality which will allow vendors to add options such as electronic cash, electronic checks, smart-

cards and debit cards. The system would integrate Oracle's security technology with VeriFone's secure payment software based on industry standards and de facto standards, creating one of the most secure Internet payment products available.

Oracle WebServer 2.0 snpports the SSL 2.0 (Secure Sockets Layer) security standard for encrypting data between the Web browser and Web eerver. The server also provides basic and digest authentication to prevent unauthorised access to Web eerver content and integrates with the Oracle7 database's security features, which provide the most advanced security available within corporate net-

Oracle's Secure Network Services incorporates leading encryption capabilities and advanced systems for authenticating users and ensuring data integrity.

Moreover, the software company says it has worked with eight top firewall vendors to pass fully encrypted data through corporate firewalls, providing end-to-end security from Intranet to Internet.

Oracle and VeriFone say they expect actively to market their product through the companies' substantial existing sales channels in the US and internationally. Oracle also says intends to make Internet commerce functionality a feature of Oracle WebServer by packaging VeriFone's virtual point-of-sale technology as modules for the WebServer....

Oracle is not the only company pioneering such technologies. In late March, network market leader Novell announced that it was licensing technology from Open Market to "enable a new generation of electronic commerce

solutions for intranets and the

Novell will integrate Open Market's OM-SecureLink technology with NetWare to provide customers with a what the two companies say is a high-performance. cost-effective solution for establishing and maintaining online storefronts and managing electronic transactions on the World Wide

According to Gary Eichhorn, president and chief executive of Open Market, there is a buge demand for this kind of software in corporations many of which are grappling with the question of just how they will use the internet/intranet opportunity.

"There has been a transition - starting over the past couple of months - from publishing everything (on the Web) to realizing that it is costing you to do so," be says. "It turns out to be a big cost-centre for lots of people.

Eichhorn says the real opportunity lies not in simply publishing vast amounts of data on corporate web pag but on using the Internet and a vehicle for real, live commerce. With commerce on the Net. the incremental cost of distribution is zero," he suggests. So it should have a profound immact on cost structures - the Internet will have to be used as an expense and will be something which can get a return."

Motor industry

#### Simulation solves a problem for Ford

The computer services company, Hoskyns part of Cap Gemini Sogeti - and a leader in the IT European outsourcing sector, is also heavily involved in applying virtual reality and simulation techniques in the manufacturing industry.

The con eny claims to ha the largest management science team in Europe - 150 people - following its absorption of operational research staff from British Coal and British

Cindy Greener, Hoskyns' marketing manager, empha-sises that manufacturers are now increasingly aware of the need to apply new methods to the entire supply chain - from production to distribution and marketing - and not, as in the past, isolating sections of the nanufacturing process.

As an example of simulation being used to solve production



welder and fitter to factory manager and is now a strategic markete

problems, she refers to a project carried out by Hoskyns last year for Ford, to improve coordination of launches for new cars across Europe.

With cars produced at three assembly plants and sold across 19 countries, via hun-dreds of dealers, the launch problem was "like solving a multi-dimensional Rnbik cabe." says Geoffrey Carr, Ford's director of programming and distribution.

Hoskyns used computer-simulation techniques to develop a 'launch machine' to replace a manual process. The system was used for the launch of the new Flesta and more recently. the new Mondeo.

Mr Carr says the system "gives plans which are significantly superior in matching demand to supply. By automating and speeding-up the process, it played a key role in keeping us on schedule".

This integration of manufacturing and marketing reflects Ciudy Greener'e own career profile: she started work as a welder and fitter - and rose to the position of factory manager - before taking her MBA degree and switching to a car-

Brokers on the Frenkfurt Bourse. In a quote-driven system, market makers must edvertise fixed prices

Pan-European stock exchange development . By Nicala Moran

# Easdaq opts for IT outsourcing

More than three dozen investment banks and broker/dealers have so far said they will operate on Easdag, the European Association of Securities Dealers Automated Quotation system, regulated by the Belgian banking authorities

eep in London's Dock lands, the computer systems for a new stock exchange are under development. But instead of armies of analysts and programmers and resources of tens of millions of pounds, Easdaq, the pan-European exchange - which is due to open in September - has one freelancer and a tiny budget. Rather than setting up and running its own systems. Easdag has opted to outsource

both development and financed for the indulgence of build-your-own systems," says Mick Newman, who is managing the project. In the 1980s, Mr Newman

was architect of the London Stock Exchange's Topic information system, and Seaq, the first automatic quotation system in the world.

"When I look back - when Topic and Seaq were built, there was no choice but to do-it-yourself," he observes. But the IT industry has now matured, and there is a wider, range of technology and services to choose from."

Easdaq, the European Assoclation of Securities Dealer Automated Quotation, will piggy-back the Eurobond dealing system operated by ISMA (International Securities Market Association), and the crossborder settlement system. Intersettle, run by a consortimn of Swiss banks.

Mr Newman is in discussion with information providers such as Reuters. Telerate and Bloomberg, on disseminating price and company information from Easdaq, to investors. The new exchange, modelled

on the US market Nasdaq, will

specialise in small, fast-growing, and particularly technology-based companies. Such companies find it hard to meet listing rules of Europe's main national stock exchanges, for example, having traded for three years, or being in profit. More than three dozen investment banks and broker/ dealers have so far said they will operate on Easdaq. The exchange hopes to list about 50 companies in its first year, starting by giving dual listing to 20 or so European companies that are already traded on

Easdag is an independent company with more than 40 shareholders - investment banks, stock brokers and venture capitalists - from around Europe and the US

hile it is independent of any European exchange, Easdaq has developed a close relationship with its US counterpart Nasdag, which is a shareholder. It is also expected that some US companies listed on Nasdaq will list on Easdaq as well. Having ruled out developing its own system on the grounds

of cost and time-scale, Easdaq considered three options: Constructing a system from standard off the shelf elements; Copying an existing system;

Or forging an alliance with another stock exchange. The first two options were rejected because of the amount of modification any off the

shelf or existing system would

have required.

A strategic alliance with another stock exchange was ruled out as being too complicated. However, ISMA stood out as a potential partner, because its system provides trade matching, a crucial requirement as the Easdaq screen-based system will be quote driven. ISMA has agreed to develop and operate a quotation system for Easdaq, which

At the same time, the realtime trade confirmation and reporting systems within Trax

sit on top ISMA's Trax trading



IT skills and outsourcing

Focus on applications in the financial sector

will be enhanced to match Eas: daq's regulatory requirements. Market-makers and brokers on Easdaq will have to be wired into the Trax network, and to install the Trax software, which will run on any workstation capable of running

Microsoft's Windows NT oper ating system. In a quote-driven system. market makers must advertise fixed prices on the quote manavailable simultaneously to anyone using the system. Brokers then telephone to trade. Both parties send details of their transaction to the trade reporting system, which matches up the two reports and forwards them for settlement. The quote management eystem will feed prices to investors via information providers such as Reuters or Tel-

n Easdaq's behalf, the existing network will be extended to bring in brokers and market makers from the US, and other parts of Europe, such as Scandinavia and Spain and Portugal, that

are not covered presently by ISMA. Work is progressing by ISMA and Intersettle to make the connection between their networks to allow information on trades to be forwarded to the Intersettle computer, based in Zurich. The settlement system will reinforce the telephone trade, advising brokers when a trade will be settled, and what it will cost.

In the absence of a single European currency, Easdaq will allow all European currencles and US dollars to be used

within the system. The Intersettle system is capable of settling any trades that take place before 1400

hours, on the same day, Although Mr Newman said this would be important in competitive positioning, Easdaq will initially opt for threeday settlement. Ali transactions will then be stored in a database, which ISMA is also setting up, for record-keeping and archiving.

The headquarters of Easdaq is in Brussele, and the exchange will be regulated by the Belgian banking authorities. Information from the database will be used to demonstrate compliance

"obviously, we will also collaborate. with any authority, for example, the US Securities and Exchange Commission if they request information on any brokers or market makers," says Mr Newman.

The database will also feed the only element of the system that Easdaq plans to develop and operate itself, the market surveillance system to enable it to ensure that the market is operating correctly.

Mr Newman is now bringing together a handful of participants: market-makers, brokers; information providers and investors, to trial the system and get an understanding of the training and installation requirements.

At the moment, the paucity of research and analysis on small, high-growth companies in Europe creates a barrier for would-be investors.

One of the keys to Easdaq's success will be to encourage analyst coverage. Easdag intends to outsource the dissemination of such information, and to set up a channel for listed companies to publicise their reports. Companies will be required to file quar-

Easdaq does not say how much it is spending on its computer systems. But it has said needs Ecu 10m (£7.87m) to finance all activities for the next four years when, according to the business plan, the exchange will move into profit. Compare this figure to the £50m or so the London Stock Exchange is estimated to have poured into the failed Taurus computer project, and - as Mr Newman says - building your own system does indeed look like an indulgence.

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Management overview

# Don't put your profits at risk

Risk assessment software is not merely for big financial institutions. Organisations of all sizes should be using it, argues Rod Newing

R isk analysis is one of the elements by which The natural uncertainties in human life are adequately modelled," says Grenville Croll, a decision-support consultant.

"Management has spent the last ten years getting to grips with spreadsheets and how to use them in business. During the oext ten years they will learn bow to incorporate oncertainty into their models and improve them as a result."

The financial losses at Bar-ings and Daiwa have shown that even large institutions have had inadequate risk management systems and they are now giving it a high priority. However, the need for software to provide risk analysis and management applies to all organisations.

Most management decisions are taken on the basis of a single anticipated outcome, whether a discounted cash flow, pay-back or forecast. Managers have become used to spreadsbeets and their ability to provide a single line forecast from a number of different variables. However, there is always a degree of uncertainty about the outcome, called

There is always a chance of an unanticipated outcome which carries a financial loss, which would not be reflected in the forecast. "Failure to acknowledge the existence of



RISK MANAGEMENT SYSTEMS: Now one of the fastest-growing segments of IT-spending in the

financial world

at Work

uncertainty is one of the reasons why major projects are late, over-budget or desperately

hard work," says Mr Croll. To make more informed decisions, managers need to know both the probability of an outcome and the extent of any associated loss.

Having made the decision. managers are then able to take steps to reduce the probability of loss and control their exposure to it. Risk assessment



A tightrope walk that failed: in 1971, near London's Tower Bridge, Cologne 'apider man' Franz Joseph Burbach, hoping to raise fiunds for charity, dropped his damaged belencing pole and decided to crawl across, but then fell into the Tharnes, half way over. In the financial world, uncertainty over risk is one of the reasons why significant projects are late, over-budget or sheer hard work

software handles all the complex calculations required to calculate the range of possible

> Software packages use a series of different techniques, including Monte Carlo analysis, which calculates a large volume of random outcomes, Latin Hypercube, which calculates relationships between variables, deterministic formulae, which are repeatedly applied to individual values

and qualitative tools, often software does not currently based on questionnaires. The entry cost of risk as

ment aoftware, either as a spreadsheet add-in or a standalone package, starts at about £500. Crystal Ball, @Risk and Predict! are popular easy to use packages which are suitable for managers, project managers, accountants and other non-technical end users. However, PA Consulting's Colin Hatfield warns that "risk

support pro-active risk management after it has besn

There are a number of small specialist risk management consultancy companies. Because of the specialist nature of the market, several of them either import suitable software or have written their own, although they all use another package if it is more

At the higher end, global financial institutions can easily spend from \$20m up to as much as \$100m. At this level, the software only represents about ten percent of the cost, with the rest being taken up with integration. The top-end software vendors are producing cut-down versions of their software for non-financial mar-

Risk analysis is required during the hld and execution phases of all significant defence and most of the larger civilian construction projects. "Suppliers have to include a

risk assessment in their hids,

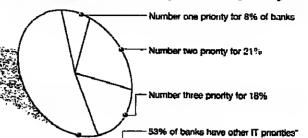
which would be continued as part of the project," says Andy Carty, bead of information meot at the UK Gov ernment Central Computer and

Telecommunications Agency. "Departments usually do their own independent risk nent and, for software, we refer them to the Association of Project Managers.

Managers need to know the probability of outcome and possible losses

"Risk management software has matured and has embodied all the principles," says Charles Taylor, co-head of global risk management at Andersen Consulting. "The next phase of the market is getting managers to think about risk and getting best-

practice disseminated. "Large organisations need to Risk Management as a 'top three' IT priority





Back to face the music: former Barings securities trader Nick Leeson, bites his to as he is escorted from Singapore Changi Airport. He is now

move from pockets of excellimited value in the real lence to a risk culture, where world," warns Ken Newland, everybody is thinking about managing director of Quintec risk in the same way and Associates, who is also chairunderstanding be risk preferman of the Association of Projences of their organisation." In ect Managers Specific Interest the UK, "banks are not book-Group for Risk. ing enough risk, so they are "Ninety perceot of the value turning away profitable busiof software lies in communicatness," commeots Chris Hoying ideas. The oumerical land, managing director of sta-tistical decisions. "The margin oo high volume transactions, approach can suffer from 'garbage in, gospel out,' so it is best used in support of one of

on which the interest rate can-

not be adjusted, is about 14 per

cent. Operating and marketing

costs are 3-5 perceot and losses

ahont 2 percent. They

shouldn't be turning away ooe

in three customers with such a

would still make more money.

Yon can accept more risk if

you plan the consequences."

high net revenue.

packages, which can capture the thinking processes. Used properly, risk analysis software will alert and educate managers to the risks involved. and allow them to make better decisions and control the sub-

the better qualitative software

sequent risk. With the exception of Barclays and TSB, they haven't "If you can manage your risk, you conserve capital with which to expand and grow," the numerical approach of quantifying and forecasting the consequences of their decisays Mr Taylor. "Cood risk sions. In other words, if they management practices stabilise took more risk, they would returns and go straight to need more collectors, but

shareholder value. □ Rod Newing MBA FCA FinstD is a specialist writer on executive computing (rnew-Singls line forecasts "are of ing@cix.compulink.co.uk).

#### Portfolio management • By George Black raud risk dominated

the headlines early last year, following the collapse of Barings Bank, hut today market risk and credit risk remain much bigger concerns for most financial

Credit risk has become less important than market risk in the City of London since the Big Bang of 1986 hroadened the activities of most of the larger financial institutions, hat it remains a substantial area of concern.

While City banks inevitably focus keenly on the financial problems of large international projects, such as the Channel Tunnel, they are also keenly involved with troubles on a smaller scale: for example, the UK's clearing banks are increasingly worried by the number of struggling. medium-sized husinesses. The banks are boosting their efforts to tackle potential bad debts. A group of national reserve banks recently issued a reminder about the need to control credit tightly.

Joint project In response to this situation, the UK merchant bank Kleinwort Benson, part of the German Dresdner Bank, last year introduced a system to provide a consolidated view

of its exposure in loans. A software system, called Cobra Limits, was jointly developed by the bank with CMG (Computer Management Group), the London-based systems company which

## The benefits of a consolidated view

How software helps Kleinwort Benson, the merchant bank, curb credit risks

Kleinwort Benson floated on the stock market. The two have worked together for several years.

The bank looked for a software package to improve the level of management information on lending, as welf as to strengthen its reporting capabilities. Not finding anything suitable, it went into partnership with CMG to develop the software.

It was spurred by the need to comply with more stringent Bank of England reporting requirements following the European Union's Capital Adequacy Directive, which came into force at the beginning of this

But more important, according to Mr Alan Craft, chief credit officer and a director of the bank, was the facility to manage the lending portfolio effectively from a single database. This would serve both to control serious risks and to assist marketing to those clients who might safely be encouraged to borrow more.

The system uses an Oracle database and a Business Objects query tool. Mr Craft says the new system is far easier by those who are not a computer specialists, than the nine year-old system (developed in-house), which it

"We are starting to see the benefits now, though there are still gremlims to be sorted out," he says. "It is already much easier and quicker to



Alan Craft, chief credit officer: portfolio reports are now available get the reports you want. Most of all, it has raised the awareness of the issue of portfolio management." However, he sees it as only

one step along a long road towards creating ideal systems. Having learnt how to model the lending portfolio in various scenarios, the bank plans to link the system to a market risk system to gain an overall view of its risk position.

"Few, if any, institutions have a complete picture," Mr Craft notes. The larger US banks are probably furthest advanced in this direction. but even they do not yet have all the answers.

Applications

Eventually it may be possible for the bank to convert its risk management systems to real-time operation, cutting out even the minimal delays which occur at present. That move will depend whether the bank is willing to tovest

heavily in upgrading systems. Although the Cobra Limits software was developed for Kleinwort Benson, it is broadly applicable to most lenders. CMG aims to market. it as a package.

■ Charity application • By Rod Newlog

### Reassurance for supporters

A charity has used risk analysis software to ensure that an important project can be successfully funded, built and operated

SeeABILITY, previously known as the Royal School for the Blind, is raising £2.25m to build a centre to care for young people with juvenile Batten's Disease. This genetic disorder leaves sufferers blind by the age of 12, with decreasing physical ability, a short life expectancy but normal mental ability. There are no specialist facilities available in the UK for those beyond the age of 19 and the charity's new centre will provide both care and the stimulation which sufferers need and deserve.

One of the parents who is liping with the project works at the Ministry of Defence." says David Ireland, seeABILI-Ty's Appeals Director. "He suggested that risk analysis would help us to present our case to potential supporters. We were introduced to HVR Consulting Services, a manage-

ment consultancy with a risk practice, who offered their services and software without charge as their contribution to the project."

"It was an interesting exercise," recalls Robert Perkins, seeABILITY's chief executive. "HVR helped us to brainstorm the potential risks as a group. They also met with us individually and with several of our trustees and our outside proj-

"We assessed a number of factors in terms of their proba-bility and possible impact on timescale, capital cost and operating costs.

We also looked at factors such as our reliance on key staff, finding a suitable site, providing a marketable aervice, the possibility of competing appeals in similar areas and the failure to find an effective appeals committee or even the loss of our marvellous Patron, the Princess of Wales."

#### Potential risks

The output from these ses sions was entered into the Risk Evaluation and Management Information System ("Remis"). This is HVRs qualitative tool which is based on Microsoft's Access database. The software

captures details of the various potential risks and uses probability weightings to assess the relative importance of each. "The software ranked the

risks, which is an exercise that we couldn't have carried out," admits Mr Perkins. Remis also categorises risks hy type, to identify common sources of risk. Detailed calculations are carried out using a specialist quantitative risk assessment package, soch as @RISK or

Remis automatically produces a risk register and management summary.

"The risk register is a running document which I keep by me," says Mr Perkins. "I use it from time to time as a check to monitor the project as It progresses. The study identifies the period of the appeal for which a particular risk is current and allocates responsibility for each to a manager. We can see when a risk has passed and when we are entering a critical

"The exercise was extremely useful," says Mr Perkins. "Although it didn't pick np anything significant that we hadn't identified ourselves, it was reassuring to find that a highly professional and sophisticated approach has largely

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confirmed the points we had already identified. Using risk techniques in association with the specialist software gave the charity a powerful tool to reassure its existing and potential support-ers and financial backers.

#### Expertise

stand the areas of risk associated with such an important project and that measures have been put in place to minimise both their probability and their impact," says Mr Perkins

As a charity with expertise in the areas of visual impairment and multiple disability, the group, he adds, "is faced with a clear responsibility to those suffering from juvenile Batten's Disease and their familles. There's no alternative we must take every step to ensure that the centre does not

☐ For more details about SecABILITY, telephone 01372 373086, fax 01372 361508.

□ Next month's software theme in the FT-IT Review. published on July 3, will look at Internet software tools. ☐ The September 4 issue will

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Redefining connectors

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Connecting

at a

Exhibition scene . By Rod Newing

# Small is beautiful when it comes to selling software

Both software buyers and vendors are looking for a sound business proposition when they attend a software event. Hugh Keeble explains why he believes 'Softworld' and 'SoftEx' events give visitors what big shows cannot provide

vents must be an infordees, "oot an annual jamboree for the industry," says Hugh Keeble, founder of the Interactive Group, which organises a series of software

"You have to get the funda-mantal propositioo right. Major exhibitioos are often organised at the convenience of vendors and the organisers. not for end-users or software

Mr Keeble used to be tha director responsible for the Show, the biggest IT event ever to be staged in the UK. It was half as big again as Networks, currently the UK's largest IT exhibition.

"An estimated 88 per cent of attendees at major computer shows were looking for applicatioo software, but an exhibition is not the best environment for seiling software. You oeed to spend time with a speclalist marketing person, but they are never available. Software is a complex product, whereas an exhibition is a five minute lead-taking exercise, so 60 per cent of attendees didn't find what they were looking

The Which Computer? show was launched in 1984, at about the same time as the IBM PC. 'It was a very successful flag-waving exercise for the IT industry in UK," recalls Mr Keeble, "Vendors took the view that the size of their stand was a reflection of their UK market share - and marketing managers were under pressure to build the biggest and the best

This, he adds, was acceptable when the margins on PCs were "incredibly high, but the clone market took off and PC prices came down. Marketing manag-

The Interactive Group

launched the Softworld series

of events in the UK in 1991. It

includes Sales and Marketing,

arces and

Accounting and Finance,

Personnel Management and

Supply Chain Management.

Interactive also organises

DBWorld, SoftDev, WebDev,

Java Developers' Acadamy,

Acadamy and Microsoft'a

cover similar subjects as

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In the US, the SoftEx series

Softworld and are based on the

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International software events

ers were asked to justify their mation service for atten- investment in the stand, so four or five major veodors dropped out and the whole w collapsed. I believe that the Networks show will go through the same experienc Mr Keeble proposed a series

of small focused software shows to Reed Exhibitions, but they ware not interested because their strategy was to conceotrate on large market-Mark Steel, another Reed director, he left to set up the Interactive Group. Their mission was to provide software selection services which would assist groups of people in an organisation to buy serious business applications "We created the Softworld

series to provide an eovirooment in which a team, often consisting of the financial director, IT director and enduser department bead, can identify suitable products in advance, review them in a time efficient way and come to a final shortlist of oce or two vendors," Mr Keeble explains. The vendors have small standard exhibition standa and seminar rooms in which they can present their product on the hour, every hour. Atteos are given a directory cootaining detalled market research and factual information about both vendors and

their products.
Exhibitioo space is traditiooally sold through brochures, but Interactive used direct selling. "We had a 95 per ceot conversioo rate because the vendors understood what we are trying to achieve," says Mr Keeble. "We didn't try to sell them additional services, such as PR and corporate image, but concentrated on sales opportunities. We took away the large stands and created a level

east and west coasts, as well

Interactive is now in the

Softworld in Europe and the

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process of franchising



le: "Software events must be more in

playing field. This encouraged smaller vendors with good products who had dropped out of the Which Computer? show because they couldn't compete

By offering a return oo investment, "we woo the hearts and budgets of vendors. Participation may only cost £4,000 and companies such as Oracle can present to 400 people, which is a good business proposition. All our vendors are coming back because they are getting most of their business from our events; which now become their main marketing tool. We also had an incredibly positive reaction from users, with 87 per cent attending seminars and 92 per cent rating the directories as good or excellent."

UK atteodacces grew quickly, but soon stabilised at about 3,000 per event, so Interactive expanded into the US in 1993 under the "SoftEx" brand. "It is like the UK market ten years ago, with several big

broad-based shows, but nobody was offering the opportunity to review software. We leveraged our UK vendor contacts and arrived in the US with a list of UK colleagues who would act

Mr Keeble finds that US executives are better event atteodees than the British: before and stay at the venue to attend both days. You have to he committed to sit through three or four presentations when there are on freebies, oo glitz and no glamour. It is very workmanlike. They are more sophisticated in understanding what software can deliver and selling software is easier because BPR and IT are an

accepted part of their culture." The regionality of tha US market offers a huge potential to organisers who can etage events oo both the east and west coasts, as well as central US. "The resource drain of setting up events from scratch is massive and wa are the only UK organiser to do it success fully in US. It is an achievement we are proud of," be

Mr Keeble sees the Intersetive Group as becoming the leading global provider of informatioo in all media to software buyers. He wants to give datailed information on software purchases in a timeeffective and conductve envi-ronment - "our directories, which are sold to ooo-atteodees, oow account for 20 per cent of the husiness our vendors get. It is tha reference manual for the market". He is defensive when it is suggested that he has changed the shape of IT events in the UK, where software presentations have oow become an established

#### The exhibition market, in general, must change'

There is a fundamental cultural difference between us and other event organisers," he explains. "We are offering the best covironment, which is why whole teams attend. Others are adding seminars to exhibitions with large stands and are not focused on offering a proposition to attendees, so their proposition is still an exhibition. Our seminar probooking service gives the proposition that we won't wasta attendees time."

Contrasting the recent Comdex exhibition in London with the far larger Comdex event in the US, he says: "Comdex in Las Vegas is a one-time/oneplace proposition to attendees. It attracts a worldwide attendance bacause it provides a worldwide stage for product launches, announcements and innovations. Attendees expect tha same experience in the UK, but it is impossible to deliver it locally, so their proposition at local level is flawed. However, they did make a big effort and

The exhibition market, in general, must change, Mr Kee-ble believes. The industry has the reputation of being a parasits. Vendors have to be there because their competitors are there. All too often organisers have launched exhibitions by choosing a banner and simply asking vendors to stand under it, without considering the fundamental proposition to the potential attendee."

The whole market should be more sophisticated and services should be provided 365 days a year. Naw electronic methods soch as the World Wide Web and CD-Roms pose a fundamental threat to the industry because they provide detailed product information to people's desks.

Evects must be designed with the attendee in mind, not the vendor. We are trying to retain the face-to-face contact at our events, because buyers react to the vendors as people, but there is a balance. The event industry must lead and innovate, just as the software market does.

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right, president of the British Computer Society, says IT staff need to be



# IT staff recruitment - By John Kavanagh

# Risk factor sparks a keener interest in IT qualifications

**Business insurers** are now looking for proven competence of IT staff when assessing risks and

considering cover for industry and commerce Then the ability to get husiness insurance cover starts depending on the proven quality of IT staff, it is clear that formal

onalifications are becoming rather more than just paper This is just one of several developments in the last six months which have brought new interest in qualifications from both companies and individuals and sparked off bectic activity among professional

to accommodate the demand. The biggest practical impe tus for companies could be the action of an insurance broker, which wisbes to remain unnamed for now, in reviewing its procedures for assessing risk on installations such as oil rigs and industrial plant As part of this review it has been looking at examining the qualifications and quality of the IT staff developing the systems which control such plant.

bodies and training companies

Mr Philip Virgo, an independeot consultant who was approached by the broker for a close interest in the develop-

"If insurance companies start taking this line on safetycritical systems, the whole attitude towards qualifications and professional bodies could change," says Mr Virgo. "They might start looking at the definitioo of a critical system: could it include certain business systems? Insurers might start looking at IT staff compeagainst fraud, for example."

Other pressures are also at work here. The Health and Safety Executive is funding research to formally define the skills needed by staff develop-

two professional bodies, the Institution of Electrical Engineers and tha British Computer Society. They say there is "a widely perceived need for a singla coharent scheme of wide application".

This statement has some justification: more than 40 organisations showed Interest when the two bodies invited bids for the contract to draw up detailed lists of skills...

Qualifications are already an immediately pressing concern for some: the insurance group, General Accident, has told its 800 IT staff that promotion will depend on professional qualifications after 1998.

This new policy is part of the drive by the insurance industry as a whole to promote professionalism, under pressure from regulatory bodies: Gen-eral Accident says the move is "part of a company-wide commitment to devaloping employee skills and organisational professionalism".

his, says IT training co-ordinator Mr Gary Smith, is perhaps not something the IT sector would have driven off its own bat, bot we believe the industry as a whole should be looking at how it is positioned among other professions". Staff seeking career progres-

sion in the company have to work towards the professional membership grades of the Brit-ish Computer Society or the Institute of Data Processing

Professional membership of the Association of Project Managers or the Chartered Insurance Institute might be an appropriate alternative for certain individuals. By 1999, staff seeking career progression will have to complete this process, or be "well on the way".

Mr Smith says that staff reaction has been positive: "Although the target date is still three years away, we are encouraged by the number of membership applications already being made."

The company is now looking at ways to help staff gain the necessary professional experience and training and work towards the examin

General Accident in tying qualifications to promotion bot, even so, it does say its oew diploma and advanced diploma in IT are "part of a drive for more structured recruitment. development and career planning, and a framework for personal development".

The diploma scheme has been put together by the NHS Informatico Managemeet Group, the Training Division, the Open University and the Association for Health IT Specialists, a staff representative group. More than 5,000 staff are ng encouraged to work for the diplomas, which are at sec-ond-year and third-year undargraduate level. There is no course or examination; candidates compile evidence and have an interview to show they have reached specified stan-

personal skills. Such developments are coming at a time when companies are using the experiences of the recession to move increasingly to flexible employment methods, such as fixed-term contracts, getting employees to take responsibility for their own career development, and bringing in contract staff for system projects rather than

dards in areas ranging from IT

to change management and

recruiting permanent people. These trends mean that both individuals and employers need to get more involved with professional bodies, according to Dr Geoff Robinson, director Ts Hursley Research Laboratory and president of the

British Computer Society. "IT professionals are oow realising the benefits of transferable skills and professional qualifications," he says. "In accounting and law, this has been the pattern for years and it is becoming increasingly relevant in IT, where the idea of

lifetime employment is now

perhaps behind us." Dr Robinson says employers should encourage their staff to become involved with a profes sional body, for the good of all: Employers, too, need transferable skills, and external qualifications can play a large part

in their skills armoury. The society is making it simpler for experienced people to achieve its professional grades; this and other efforts have brought a rare net increase in membership from 34,000 to 35,000 in the last year. Even so, tt still represents only around 10-15 per cent of IT staff. The Institute of Data Processing Management has 10,000 members; some belong to both bod-

bere is a bistorical image problem bere, according to Dr John Elmore, IT director at ICL and chaliman of a project at the Institution of Electrical Eogineers (IEE) aimed at finding out what IT people want,

The IEE has surveyed 1,300 IT specialists and found that they want to be seen as professionals and waot standards. codes of practice and formal ways to keep their knowledge up to date.

But Dr Elmore says they also see the professional bodies as too academic and insisting on engineering degrees. The IEE is now looking at ways to overcome the perceptioo problems and build on the new desire among staff to be seen and to behave as professionals. The British Computer Society is in touch with this activity.

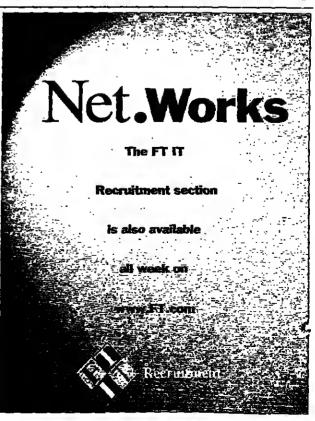
The time is certainly right for such work, for the developments of the last six months suggest that individuals' career prospects and even business survival will increasingly depend on IT qualifications.



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But the 45,000 BTU/h is just one of a wide range of air conditioners from Fujitsu. As well as cassette units they include floor standing and wall, window or ceiling mounted models, all of them neat, unobtrusive and stylish. They feature a whole host of technological innovations such as infra-red remote controls, a super quiet action and a unique multi-directional air flow adjustment system which ensures an even distribution of air in every direction. There is also a choice between units which supply cool air and those which offer both cooling and heating options.

If you'd like to know just how much of breeze it is to get fresh air indoors, telephone 01707 272841, Fax 01707 273111 or write to the address above.

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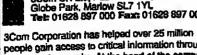
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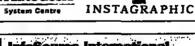
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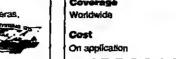
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65 Network Connectivity

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Worldwide

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61 IT Services

**62** Manufacturing Control

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Network House, Newbury Business Park, London Road, Newbury, Berkshire RG13 2PZ Tel: 01535 580000 Fax: 01635 44578 Cabletron Systems is a leading developer, manufacturer and marketer of standards Ethernet, Token Ring, FDDI Fast Ethernet and ATM networking solutions. Their product range also

incorporates their enterprise management platform,

Cabletron's recent announcements include their SmartSwitch family of highly manageable and reliable virtual network ready switches. Their SecuraFast VLAN and VNET Manager applications have been well received within the industry for their

invovative approach to integrating existing instruction of switched integrating existing instructions in the control of the co virtual Intranetworks. The Company Meworld Solution

Radius Computer Services Ltd

Milifield House, Woodshots Meadow, The Croxiey Centre, Watford, Herts WD1 8YX Tels 01923 255722 Company Description
Point.Man is a new generation enterprise system using a full Windows presentation and client/server technology. It is hardware and database independent. Point.Man provides a familiar Windows interface to which users adapt with which the provided in the provided of t

minimal training and support. It has three highly functional modules, Customer Service, Manufacturing and Financial management. Client server, MS-Windows Client, UNIX or NT Georgraphical Coverage UK and Eire, plus worldwide support

radius

69 Emilex Europe Ltd Muberry Business Park, Fishponds Road Woldingham, Berkshire RG41 2GY Tels 01734 772929 Faxo 01734 773237

performance industry standard storage and network interface which is being adopted by major computer

Applications: Novel WAN routing and remote access of networks Costs Emulex offers market

10 Mod-Tap Limited 7 Nonthbrook Industrial Estate Vinceni Ave, Southampton SO16 6PB Tel: 01703 701919 Fear 01703 702147

ISO11801/EN50173 Class D/EIA568 117

Applications: LANS. Structured Cabling Cost:Mod-Tap stand number M50 at Networks

66 Network Security

**67** Network Systems Integration

Security

Solutions

Networking

69-70

68 Network

International Data Security 10 Alfred Place, London WC1E 7EB Tel: 0171 209222 Fax: 0171 209 2383

Network Security and Management Product, consultancy, training and services. Working with the OTI and BSI on the establishment of BS7799 as an acknowledged Code of Best Practice for Information Security and ecling as the agent for McAfee in the UK in the verification of anti-virus products under the ITSEC criteria. The International Data Security group of companies embreces an active research and development organisation, based in the US, who are working with the major network operating system companies to bring high level C2/ITSEC E3

UK with sister companies in US and South Africa

Various LAN Network Security and Management

Company Description International Data Security is a foremost supplier of security to the workstation.

Available on request.

### FILT DIRECTORY FILT DIRECTORY FILT DIRECTORY

71 Networking Enclosures .

72 Networking

Products &

Services

73-75 Networking Solutions & Internet

Software

Rittal Limited Braithwell Way. letaby, Rotherham S65 8QY Tel: 01709 704000 Fex: 01709 701217

Fittal is the worlds largest enclosure manufacturer. Among the products is a comprehensive range of enclosures and accessorias designed for the Datacomms/Networking industry. Enclosures for wall mounting or floor standing for equipment or cabling use meet varous standards. A 5 day configuration and siting service is available.

Geographical Coverage The world

Applications All networking/Communications

72 Gray Communications Caxton Way, Watterd Business Park Watterd, Heris WD1 8XH

Cray Communications designs and manufactures a range of networking technologies including high speed switching, routing, and voice and data integration. With switching, rousing, and voice and data integration. With a wide range of experience, Cray Communications has the proven ability to integrate these lectmologies into a single enterprise-wide network.

Heretwere comparationally Standards

Qeographical Coverage

Cray Communications has 55 sales offices in five

valinants and employs over 2,900 people worldwide Applications
As local and wide area networks converge, organisations require a single, enterprise wide network that will provide transmission of voice, data and image.

UK office:

cost of downtime.

Welcom Software

Cost Dependent on size of network

84

Cray

LanOptics offer high quality networking systems to improve LAN/WAN connectivity for token ring, Ethernet and AS/400 midrange systems. The product portfolio includes hubs, switches; ATM technology and integrated hub/router (Cisco IOS 2500) combinations for Remote Access and enterprise wide network managament systams.

NetGuard

InvertoMatic Viction (MV)

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are organisations of all sizes and nationalities who want to insure their

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SHELL, HEINEKEN, MERCEDES-BENZ, to name a few of them.

guide of the Financial Times? That is our - IMVs - business. Our customers

companies against productivity & data loss stemming from power failures.

MIDLANDS ELECTRICITY BOARD, ABB, SIEMENS, AT&T, MERCURY

COMMUNICATIONS, CENTRAL BANK OF CIS, BANK OF ENGLAND,

IMV is the result of the 1995 merger between Netherlands based Victron

integration of these systems in computer environments. InvertoMatic's

and Switzerland based InvertoMatic. Victron's expertise is high performance

uninterruptible power supplies in the low and medium power range, and the

expertise is big uninterrupted power systems for applications with very high

We like to see our company as a tree: alive, and with a strong hidden base.

The roots are most valuable, with customer support, service infrastructure,

to protect from single modems until the complete lighting of an airport landing-strip, the product range is the trunk. The leaves, numerous and constantly renewed, are constituted by the many software versions needed

to integrate systems in (managed) networks, and the small adaptations

Some customers buy from us because we have an effective solution for

own speed as a response to a changing environment.

needed to suit projects demands. Roots, trunk and leaves evolve at their

technology expertise, and logistical facilities as its major components. Suited

COCA-COLA, CIBA-GEIGY, HEWLETT-PACKARD, IBM, DELL, REUTERS,

IMV Victron UK Ltd, f.a.o. Paul Fletcher

Tel +44 1455 618 666 Fax +44 1455 611 446

Internet firewall. Unlika most firewall systems, Guardian provides network managers with the ability to restrict user access to all or parts of the various services available on the net. In addition, time limits can be applied to access. NT version is now available.

**NetXchange** 

NetXchange, a LanOptics company offers a unique fax exchange system for the Internet. The Internet Fax Exchange enables integration with uniform messaging applications such as for voice or E-mail. It is designed for the integration of fax services into Uniform Messaging platforms and is compatible with MAP1, Windows and Windows 95.

Geographical Coverage

**76** Object Oriented Application Development Data Access UK Ltd Lonsto House, Princes Lane, London N10 SLU Tel: 0181 3652424 Fax: 0181 3652345 E-Matte marcomuk@daccess.com

Daga-lax is a complete application nevelopment environment with all the tools needed in a single, integrated package. DataFlex combines a procedural and an object oriented 4GL, Application Generator, RDBMS, and a complete set of built-in productivity enhancing tools, including a powerful OO Application

Hardware/Compatibility: PC DOS, OS/2, Windo Windows '95, Windows NT, UNIX

leographical Coverage: World-wide UK Istributors: DATOS 01762 362002 / Informa Tech 0141 5541185 / MSG (Cardiff) 01222 235244 / Unicom 0181 7429055 DATAFLEX

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is the leading supplier of integrated distributed output management solutions for heterogeneous enterprise networks. Il encapsulates all major components in the areas of network-wide output file transfer, fully automated operations, output file viewing and processing, integrated electronic forms and processing and more........

Geographical coverage Worldwide

LanOptics

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Global

**Applications** LAN & WAN infrastructure LARSPITCS 70.
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Environment

77-84

Power.

85 Output

Management

Solutions

**Protection** 

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Platforms supported: MPE/IX, HP-UX, OpenVMS, Ultrb, Digital Unix, A/X, SCO-Unix, Solaris 2, Slotx, Windows NT, Windows Win 95, Novell and OS/2 LANManager



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Headquarters: Sales5@Victron.nl

handling power failures in environments with Client/Server architectures, where our PowerFlag software can avoid frustrating domino effects. Others do so because of the unmatched reliability of our products even in the most hostile environments. Others still, do so because of the excellent value for money we offer and the wide spectrum of solutions available. We feel privileged to have our customers. We work hard to allow each to be satisfied with high uptime performance and to be comfortable without the worry of unneeded systems crashes.

Safe and managed power is our business. If you have an interest in uninterrupted power as well, please contact us in the UK. Please E-mail us for inquiries on the continent.

Compatibility

SNMP version 1&2; WINDOWS NT, 95, 3.11, 3.1; UNIX major vendors; NOVELL 2.x, 3.x, 4.x; AS/400; Mac System; OS/2.

Geographical coverage

Subsidiaries in UK, France, Netherlands, Switzerland, Italy, Spain, Germany, Thailand, Singapore, Hong-Kong, Greece; Sales, service and support in all 220-240 V countries including developing

**Applications** 

Distributed computing, Computer room, Telecom (billing and transport), Industry, Facility Management.

INVERTOMATIC VICTEON INTRGY SYSTEMS.

Famborough Aerospace Centre PO Box 87, Famborough, Hants GU14 SYU Tell: 01252 382020 Fax:: 01252 382380

**86** Outsourcing

88 Project &

89 Software

Canal Place Leeds LS12 2DU 87 Project Tel: 0345 010105 Fax: 0113 243 6950 Management CSI Outsqurcing specialise in providing high quality, Software .

Risk Management Software Hardware/Compatibility
AS/400 Ops, Applications, Tech support, LANs,

91 Intergraph (UK) Ltd

Delta Business Pk, Gl Western Way Swindon Wilts, SNS 7XP

Tel: 01793 486000 Fax: 01793 492991

Written specifically for Windows, SOLID EDGE is a

revolutionary, high performance parametric 30 Solid Modelling CAD system for mechanical assembly and part modelling, SOLID EDGE signals a new era

and part modelling. SOLID EDGE signals a new era of usability openness interoperability allowing the designer more time engineering and less time driving a CAD system. Incorporating all the tools to complete part modelling, assembly, drafting, detailing and workgroup data management in one

comprehensive package. Hardware/Compatibility: Intel besed PC systems running Windows '95 or NT

Applications:Part design and assembly for

Geographical Coverage: UK Wide

WANS, Desk-top Development phical Coverage 90 Software Service from Detacentre in Nottingham

Maintenance

66 CSI (Computing Services for Industry)

Southbank Technopark 90 London Road, London SE1 SLN Tel: 0171 401 2626 Fax: 0171 922 8865

Company Description
Welcom, a privately held corporation, is a worldwide leader in the development and marketing of project management software. With more than 10,000 licences worldwide, Welcom specializes in helping Fortune 500 companies implement total management solutions. fully managed systems for companies using IBM midrange equipment for key business applications. Service levels to systems users are guaranteed. Services can be based on customer's eits or at a CSI location and provided 24 hrs 365 days a year.

Hardware

Windows-based, OLE 2.0 Automation and SQL Head office is in Houston, regional offices in London

and Paris with distributors worldwide.

92 Plasmon Data Limited

Plasmon manufactures and supplies a wide range

of optical storage solutions including media and software. The range includes CD Recorders, low cost PO 650MB rewritable drives and MO drives with capacities of 2.6Gbytes. The industry's widest

range of jukaboxes are available with capacities from 45 to over 670 Gbytsa. Software options enable seamless integration of these products into

archiving, and CD publication.

Hardware/Cost: Prices range from £399 for PD

drives, \$825 for CD Recorders, and up to \$34,000

ographical Coverage: Offices worldwide

most operating systems requiring additional capacity for storage extensions, HSM, backup,

Writing Way, Melbourn, Herts SG8 6EN Tel: +44 1783 282963 Fasc +44 1783 264444

Open Plan Professional and Open Plan Desktop



Training & consultancy also available.

Hardware: PC-compatibles 485 or Pentium

Geographical Coverage: Primavera products
are available werldwide. Forgetrack are UK desters applications: Engineering, construction, IT, ol/gas, alc. Cost: P3 - £1995; ST - 2199; MC - 2695; PRIMAVERA LAN-P.O.A.

Primavera Systems, Inc.

Tek 01992 500900 Fax: 01992 589495

Management system consists of Primavera Project Planner for large, complex projects; SureTrak for smaller less complex projects; Monte Carlo for Risk

Management: Parade for performance measurement and Expedition for contract control.

c/o Forgetrack Ltd 27 Old Cross, Heriford SG14 IRE

Company Description
Primavera's Integrated Concentric Project

93 AceCad Software Limited

BS-B7 Maldenhead Office Park,

Westscott Way, Maldenhead Berks SL6 3RT Tel: 01628 822900 Fex: 01628 823110 Company Description
AceCad developed STRUCAD, a 3d solid modelling
system for automatically detailing structural
steelwork. Users create a basic wire frame model of
the structure, connections and beam members are added to produce a complete solid model. The system then automatically produces workshop details or CNC data from the model, STRUCAD also offers interfaces to numerous analysis and Plant Deeign products. STRUCAD is the most widely used 3-d steef detailing system in the UK with over 100 customers and world-wide there are over 700 systems installed in 25 countries. AceCed is a full collaborator in the CIMsteel project.

Hardware Pentium PC operating under Windows NT Geographical Coverage World-wide

RCHS Compiling Struces Horton Manor, Stanwell Road Horton, Barlethire SL3 9PA Twl: 01753 681077 Fee: 01753 685556

RCMS supplies IT services specifically designed to provide a competitive business advantage for its corporate customers. RCMS specialises in the design and development of distributed Client/Server systems. This covers operational business systems, information delivery, data-warehousing and integration with the internet. Additional Technical Services include specialist support and Application Management. RCMS has been providing IT solutions to its customers for 10 years. Other members of PCMS Group Include: NBI who provide bespoke Document Management and Workflow systems: and RCMS Interact

94 Family Comparation Ltd.

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Geographical Coverage

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whose expertise is in IT Training. Cost: On application

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RCM5

management expertise of British Aerospace to enable BAHAL, an ISO 9001 software services provider, to deliver high quality, cost effective solutions to British Industry. Hardware

95 Frame Communications Ltd

Littori House, 52-56 Buckingham St, Aylesbury, Bucks HP20 2LL

Frame Communications Ltd has over 20 years of

Frame Communications and Telecommunications experience in the Data and Telecommunications market specialising in Test, Measurement, Diagnostic and Management systems, in both the private and public network environments. Test Solutions 8 Expertise cover; LANWAN, ISDN, ATM C7/SS7, Frame Relay, SMDS, X.25, SNA, GSM & BERT

Georgraphical Coverage: UK, Eire & Europe

Product Development,
End Users. PTT/Carriers

Handware: WAN/LAN/ATM solutions via

PC & Windows s/w

Applications: Field Support,

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90 BACHAL Software Ltd

Client Server, Mainframe and PCs. Geographical Coverage , US and Pacific Rim.

Company Description

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pany Description

91 Solid Edge

92 Storage/ Optical & CD

93 Structural Detailing Software

94 System

Management 95 Testing &

Management Equipment

96 Voice & Information Processing **97 UNIX** 

Connectivity Software 98 Voice Processing

Solutions 99 Voice Recognition Software & Systems

100Worldwide

Wab

& CTI

nanufacturing industry

96 Brite Voice Systems Brannan House, 4 Cambridge Business Pk Milton Road, Cambridge, CS4 4WT Tel: 0161 975 4044 Fax:: 0161 975 4001

SOUD EDGE

Brite Voice Systems is a world leader in providing voice and information processing solutions. Users include major corporate customers, call centres and network operators. Applications range from interactive voice response and computer telephony integration to a range of natwork services. In addition to integrated system provision Brite can also offer it's customers the use of it's fully managed service bureau and it's experience in the elephony auditing arena.

Geographical Coverson: International - Offices worldwide

Company Description
NCD Software is a major vendor of information access products. PC-Xware is a total solution for PC & UNIX network integration, providing enterprise networking & toots to make networked PCs sery to manage for UNIX professionals. Marathon for Windows 95 / NT is an NFS solution, providing UNIX file & print integration & access to IP host-based analizations.

x/Open: NCD

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eurovoice limited
Copioch House, Old Landon Rd. Inswich, UTS 3.W
Tel: 01473 730000 Fazzr 01473 730001

eurovoice is a specialist supplier of voice processing, computer telephony integration and internet-based solutions. Our new SWAN OmniServer provides flexible voice, fax and interne functionality on a high-performance Windows NT based platform. Harriware/Competabliity: Most databases and host systems, most PBXs &

Geographical Coverage: eurovoice focuses on Western Europe and Scandinavia.

99 **Feedle Lie** 

Vocafis is a world leader in speech technology and call processing applications, delivering spee controlled systems that increase busine and make communication easier. Products include a virtual telephone operator, a voice dialling system and bespoke applications for call centre transaction

Applications
Telebanking, help desks, travel
Information, retail



HEROIX

100 Ethix Distribution Ltd Ethix House, Meadow Court,Off Market Place, South Normanton, Derbyshire Tel: 01773 863668 Fax: 01773 863918

Commercialization of the world wide web more companies are demanding an effective and standard method to monitor their reach through the internet. And with traffic levels growing exponentially, any delay in fixing problems can result in thousands of missed opportunities. Webwatcher Executive™ builds on the positive customer feedback gathered from the successful release of Caravelle Webwatcher™ late in 1995. See Caravelle Webwatcher Executive m on stand W18 at Networks '96.



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Windows 3.x. Windows 95 & Windows NT Geographical Coverage
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Applications: IVF,CTI, On-line services Solutions from £10,000 EUFOVOICE

Worldwide

Users

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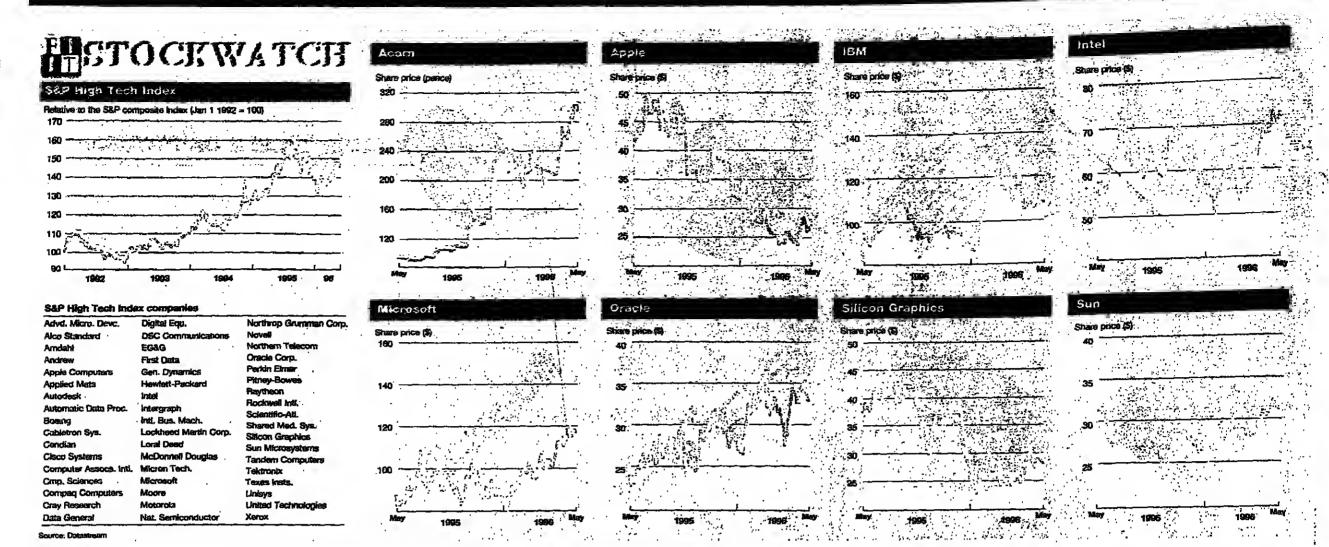
Hardware Compatibility Industry standard ISA hardware Geographical Coverage

**VOCALIS** 

Applications
How effective is your web site?

24 FT-17

#### IT equity analysis



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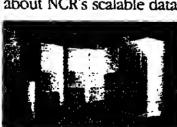
Knowledge that is already helping some of the world's largest banks, retailers and airlines understand their customers needs.

Oracle and Informix.

Expertise that has made us the world leader in data warehousing.

The world's most experienced data warehouse professionals can help you set up and maintain the most scalable data warehouse on the planet.

To get more information about NCR's scalable data warehouse call 0171 725 8989, or experience our data warehousing capabilities first-hand at: http://www.ncr.com





Stockwatch comment • By Paul Taylor

### IT companies ride the Internet wave

More suppliers are committed to launching network computers later this vear

S technology shares were generally higher at the end of May month higher, although some shares remained under pressure, reflecting uncertain industry conditions.

The gains came despite continuing signs of weakness in the Semiconductor Industry Association's measure of chip demand in April. The ratio of orders received to orders shipped, feil to 0.78 from year, Acorn, the UK-based March's 0.79, which had been the lowest figure in nine years. Despite this, the Nasdaq com-posite, with a technology content of 40 per cent, closed the month 35.1 points higher at

Among the leading information technology shares, Microsoft, Intel and Compaq Computer all posted gains at the start of the month after reporting generally better than expected first-quarter results and mostly positive comments on the earnings outlook.

In contrast, Apple Computer's shares closed the period at little changed at 24% despite unveiling a new strategy including a slimmed-down
product line - designed to
return the troubled US computer manufacturer to profits. Mr Gil Amelio, who took over as chairman three months ago after Mr Michael Spindler

was ousted, said Apple was at a crossroads - "we can return to prosperity or begin a long slow decline into irrelevancy. The difference will depend on how well the organisation comes together behind united goals," Mr Amelio said. However, the group, which reported a \$740m (£490m) on sales, down 18 per cent to \$2.2bn in the second quarter, subsequently warned in a Securities and Exchange Com-mission filing that it will

remain in loss this year. Dell Computer's shares rose sharply after it announced first quarter earnings which comfortably ontpaced most analysts' forecasts. The group reported that its earnings rose 33 per cent to 84 cents a share. Other recent gainers have

included Oracle, the second largest software group in the world, after Microsoft, whose chairman Mr Larry Ellison has been the main driving force behind the concept of the net

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work computer or 'thin client'. Last month saw Oracle, International Machines, Apple and Netscape jointly unveil detailed and open specifications for the new machines - designed primarily to be low-cost devices for exchanging information over the Internet or corporate intranets - together with a list of

early manufactures. Among those companies committed to launching network computers later this technology group which undertook much of the work on the NC 'reference design', said it will launch a machine dubbed the NetSurfer.

Like other companies which have succeeded in synchronising their strategies with the wave of investor interest in all Internet-related matters, Acorn's shares have risen sharply since last Autimin.

ther companies which appear to be riding the 'Internet wave' include Oracle, whose strategy is now closely linked to the growth of enterprise networking and the move towards rich content and multimedia internetworking; and Sun Microsystems whose servers continue to provide much of the corporate comput-ing power behind the Internet and internal intranets.

Sun also continues to benefit from interest in Java, the Internet 'applet' programming technology which has now been re-designated a mini oper-ating system. In contrast, Silicon Graphics shares remain weigh the impact of the increasing competition posed by Intel-powered machines at the low end of the workstation market and digest the implications of Silicon Graphics' recent acquisition of Cray Research.

Next month's FT-IT Review will include a Jocus on ATM and fast-switching - the topic was held over from this issue, due to pressure on space. The July issue will also look at applico: tions for multimedia. For more details, see panel, page 2

